



FRIEDRICH-ALEXANDER  
UNIVERSITÄT  
ERLANGEN-NÜRNBERG

PHILOSOPHISCHE FAKULTÄT  
UND FACHBEREICH THEOLOGIE

NATURWISSENSCHAFTLICHE  
FAKULTÄT

# ELINAS

Erlangen Center for Literature and Natural Science

Gründungstagung / Inaugural Conference

*Physics  $\rightleftharpoons$  Literature: Theory – Popularization – Aestheticization*

An abstract graphic featuring a central bright yellow and white light source from which numerous thin, glowing lines radiate outwards. Some lines are straight, while others are curved or spiral. In the background, there are faint, overlapping letters and symbols in red and white, creating a sense of digital or scientific complexity.

## Tagungsprogramm *Conference Programme*

FAU Erlangen  
Orangerie, Schlossgarten 1  
29.05. – 01.06.2014



EMERGING  
FIELDS  
INITIATIVE

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# ELINAS

Ist Physik poetisierbar? Gibt es eine Rhetorik physikalischer Sprache? Physik und Literatur sind zwei Pole der Weltbetrachtung und Welt Darstellung, die, in Verbindung gebracht, ein produktives Potential entwickeln können.

*ELINAS*, das *Erlanger Forschungszentrum für Literatur und Naturwissenschaften*, ist ein interdisziplinäres Forum, das sich dem wechselseitigen Wissenstransfer zwischen Physik und Literatur widmet. Es fragt sowohl nach der Bedeutung von Sprache und Metaphern in der physikalischen Forschung als auch nach den Verfahren der Diskursivierung und narrativen Modellierung naturwissenschaftlicher Theorien in literarischen Texten. Das Zentrum ist ein Forum naturwissenschaftlicher und philologischer Disziplinen. Mit ihm wird eine ungewöhnliche Fächerkooperation eröffnet, die auf Dauer angelegt ist: Natur- und Kulturwissenschaftler führen darin ihre Methoden zusammen zur Untersuchung kulturspezifisch geprägter Wissenschaftssprachen, zur Analyse der Ethik und Rhetorik wissenschaftlicher Argumentation und zur Reflexion der kulturellen Bedeutung natur- und literaturwissenschaftlicher Forschung.

*ELINAS* ist ein *Emerging Field-Projekt* der *Friedrich-Alexander-Universität Erlangen-Nürnberg*, das von der Naturwissenschaftlichen, der Philosophischen, der Medizinischen und der Technischen Fakultät getragen wird.

- ELINAS organisiert internationale wissenschaftliche Tagungen
- ELINAS veranstaltet Lesungen mit Schriftstellern und Vorträge für Interessierte
- ELINAS bietet das „Science & Poetry-Lab“ an
- ELINAS bietet interdisziplinäre Lehre an

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## ELINAS

Can physics be poeticized? Is there a specific rhetoric to its language? Physics and literature appear to offer two diametrically opposed ways of viewing and representing the world. Yet in combination they have great potential for development.

*ELINAS*, the *Erlangen Research Center for Literature and Natural Science*, is an interdisciplinary forum dedicated to the exchange of knowledge between physics and literature. Its field of inquiry includes both the significance of language and metaphors in physical research and the discursive and narrative processes in literary representations of natural scientific theories. *ELINAS* intends to provide the disciplines of physics and philology with a forum for research into the cultural specificity of scientific language, the analysis of the ethics and rhetoric of scientific argumentation and reflections on the cultural significance of natural scientific and literary scholarship.

*ELINAS* is an *Emerging Fields Initiative project* at the *Friedrich-Alexander-Universität of Erlangen-Nürnberg* and is supported by the faculties of Sciences, Humanities, Medicine, and Engineering. As such, it establishes a rare and long-term inter-departmental cooperation in which natural and cultural scientists combine their methodologies to examine the reciprocal transfer of knowledge between natural science, literature and literary scholarship.

- *ELINAS* organizes international interdisciplinary conferences
- *ELINAS* organizes readings with authors and lectures for interested participants
- *ELINAS* offers the “Science & Poetry-Lab”
- *ELINAS* offers interdisciplinary teaching



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Programme for Thursday, May 29, 2014

		at Wassersaal der Orangerie
13.00	<b>Antje Kley</b> Vice-President, FAU Erlangen	<i>Welcome Speech</i>
–	<b>Klaus Mecke / Christine Lubkoll / Aura Heydenreich</b> Departments Physik / Germanistik, FAU Erlangen	<i>ELINAS</i>
13.30	<i>Moderation: Antje Kley</i>	
13.30	<b>Arkady Plotnitsky</b> Department of English, Purdue University, Indiana	<i>Reality and Probability in Physics and Literature — From Laplace and Kleist to Heisenberg and Musil</i>
–	<b>Dirk Vanderbeke</b> Department of English, Jena University	<i>Physics of the Fantastic – Fantastic Physics</i>
16.00	<b>Jörn Wilms</b> Astronomical Institute, FAU Erlangen	<i>Science in Science Fiction – How Does an Astronomer Read Science Fiction?</i>
16.00	<i>coffee break</i>	
16.30	<b>Kirsten Shepherd-Barr</b> Faculty of English, University of Oxford	<i>“Unmediated” Science Plays: Seeing What Sticks</i>
–	<b>Seth Clabough</b> Sweet Briar College, Virginia	<i>Quantum Physics, Physics Fiction, and All Things Await</i>
18.00	<b>Reception (Orangerie)</b>	
20.00	<b>Durs Grünbein</b> Rom	<i>Lesung aus: „Cyrano oder Die Rückkehr vom Mond“</i>

see abstracts on the following pages

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*Arkady Plotnitsky is a professor for English, Theory and Cultural Studies and co-director for the Philosophy and Literature Program at Purdue University. He obtained his Ph.D. in Comparative Literature and Literary Theory from the University of Pennsylvania and a M.S. in mathematics from the Leningrad (St. Petersburg) State University, Russia. His research interests range from history and philosophy to the relationship between literature, philosophy, and science.*

***Reality and Probability in Physics and Literature, From Laplace and Kleist to Heisenberg and Musil, and Beyond***

The aim of this paper is an exploration of the meaning and significance of the radically new relationships between reality and probability, and the corresponding revision of both concepts themselves that emerged in the wake of the introduction of quantum mechanics in 1925-1926, especially in Heisenberg's discovery of quantum mechanics. I shall argue, however, that an analogous understanding of these relationships and of both concepts has begun to emerge, in the wake of and as a response to Kant's philosophy (although Kant himself stopped short of this understanding) in literature with the Romantics, such as Kleist and Hölderlin in Germany or Shelley and Keats in England, and has gradually developed throughout the history of literature and later on, beginning with Nietzsche, philosophy.

This understanding and its significance became especially pronounced in modernist literature, now often under the impact of quantum theory, with Musil's work providing the main example for this paper. At the same time, throughout this history and extending to our own time, the classical view of reality, probability,

and their relationships, developed in classical physics and the mathematics and philosophy of probability in the eighteenth century and expressed arguably most definitively by Laplace, has continued to persist and indeed to remain dominant, as famously exemplified by Einstein's discontent, based in his classical philosophical position, with quantum mechanics and his debate with Bohr. Schrödinger, too, adopted the classical-like position as well, already in his initial work on quantum mechanics as a wave mechanics. I shall also comment on the difficulties that the physics, mathematics, and epistemology of quantum theory pose for popularization of the theory, from quantum mechanics to quantum field theory, and for the interpretation and popularization of literature, especially modernist literature, when it is defined by this type of epistemology. While, we rarely, if ever, speak of "popularization of literature," as against science, the problematic in question in this paper makes apparent that it in effect we do deal with popularization of literature in both academic and broader cultural contexts.

**Publications:**

- Niels Bohr and Complementarity: An Introduction, Berlin & New York: Springer Scientific Publishers, 2012
- Epistemology and Probability: Bohr, Heisenberg, Schrödinger, and the Nature of Quantum-Theoretical Thinking, Springer series Fundamental Theories in Physics, Berlin & New York: Springer Scientific Publishers, 2009
- Reading Bohr: Physics and Philosophy, Springer series Fundamental Theories in Physics, Dordrecht, Berlin & New York: Springer, Scientific Publishers, 2006
- The Knowable and the Unknowable: Modern Science, Nonclassical Thought, and the "Two Cultures," Ann-Arbor, MI: University of Michigan Press, 2002

## ***Physics of the Fantastic*** **– *Fantastic Physics***

Traditionally, the fantastic is described as a genre which, in contrast to science fiction, is not built on the currently known scientific worldview, but includes elements that are incongruous with the established natural laws. The respective subgenres—magic realism, fantasy, urban fantasy, New Weird, etc.—then differ from each other in the ways in which the supernatural, magical, fairytale, or also abstruse motifs and plot devices are employed and lead to the often cited uncertainty of the reader.

Fantastic literature is nevertheless largely rooted in the paradigms of classical physics. The natural laws are only suspended under very strict conditions and are often replaced with equally clear and unbreakable alternative rules.

At the same time, authors have time and again chosen fantastic texts for their discussion with the natural sciences and have thereby addressed aspects that evade common comprehension and introduce a world that are only tenuously relatable with our everyday experience. On one end there are scientists who, following Lewis Carroll, design witty and whimsical worlds with evident didactic interest—noteworthy here is, for instance, George Gamov and his Mr Tompkins stories—; on the other end are the authors who use the outlandishness of modern physics as a opportunity to construct a reality according to the stranger-than-fiction principle—which can be found with, for instance, Thomas Pynchon. This paper will present a few texts in order to, on the one hand, examine their heuristic potential, and on the other hand, elucidate the narrative strategies of a “world alienation.”

### **Publications:**

- Theoretische Welten und literarische Transformationen. Die Naturwissenschaften im Spiegel der ‘science studies’ und der englischen Literatur des ausgehenden 20. Jahrhunderts. Tübingen: Niemeyer Verlag (Buchreihe der Anglia), 2004.
- „Physics, rhetoric, and the language of Finnegans Wake.“ The Languages of Joyce. Hrsg. Rosamaria Bosinelli et al. Amsterdam und Philadelphia: John Benjamins, 1992, 249-256.
- „The and in ‘Science and Literature’“. Anglistentag 1997. Hrsg. R. Borgmeier, H. Grabes und A. Jucker. Trier: Wissenschaftlicher Verlag Trier, 1998, 243-258.
- „Wheels of Fortune or Vicious Circles: The (R)evolutionary Stories of Stephen Jay Gould.“ Lost Worlds and Mad Elephants: Literature, Science and Technology 1700-1990. Hrsg. E. Schenkel und S. Welz. Glienecke/Berlin und Cambridge, MA.: Galda und Wilch, 1999, 349-371.

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***Science in Science Fiction – How Does  
an Astronomer Read Science Fiction?***

## **“Unmediated” Science Plays: Seeing What Sticks**

This paper explores recent developments in the way theatre has engaged with scientific ideas, redefining the “science play” as it had become known through plays like Michael Frayn’s *Copenhagen* and Tom Stoppard’s *Arcadia*. In contrast to these playwright-driven, highly textual science plays, new science-theatre interactions are often director-oriented, devised works that emphasize process, performance, and direct engagement with the science rather than mediating or explaining it through such mechanisms as character, biography, and metaphor/analogy. They also tend to rely on collaboration between directors and scientists. I will discuss examples of key productions over the past decade highlighting the defining features of this newer work, its methodologies, and some of the new debates it has generated about such issues as intermediality and the postdramatic. My discussion will then move outward to consider how these developments contribute to, and change the terms of, larger debates ongoing about inter- and transdisciplinarity and the “two cultures” of humanities and science.

### **Publications:**

- Science on stage: From Doctor Faustus to Copenhagen (Princeton University Press, 2006)
- “Darwin on Stage: Evolutionary Theory in the Theatre,” *Interdisciplinary Science Reviews* (2008), vol. 33, no. 2, pp. 107-15.
- “Science and Theatre in Open Dialogue: *Biblioetica*, *Le Cas de Sophie K.*, and the Postdramatic Science Play”, co-author Liliane Campos, *Interdisciplinary Science Reviews* 31: 3 (September 2006), pp. 245-53

### **DR. KIRSTEN SHEPHERD-BARR**

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*Kirsten Shepherd-Barr is a University Lecturer in Modern Drama at the University of Oxford, and a Fellow and Tutor in English at St Catherine’s College, Oxford. She was educated at Yale University, the University of Oslo and the University of Oxford, and taught at the University of Pennsylvania, North Carolina State University, and the University of Birmingham before coming to Oxford. Her work in the field of theatre and science includes the book *Science on Stage: From Doctor Faustus to Copenhagen* (Princeton University Press, 2006; paperback 2012), her forthcoming book *Theatre and Evolution from Ibsen to Beckett* (Columbia University Press, 2015), and two special issues of the journal *Interdisciplinary Science Reviews* on “new directions in theatre and science” (co-edited with Carina Bartleet).*

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*Seth Clabough has a MA in English from USC and a PhD in English (Creative Writing emphasis) from the Aberystwyth University. He is a professor, editor with the James Dickey Review, and published scholar, poet, and fiction writer. His recent work is appearing/has appeared in Story South, CBE–Life Sciences in Education, Writing in Education, London's Litro Magazine, Fjord's Review (featured poet), Citron Review, Aesthetica: the Arts & Culture Magazine (UK), Magma Poetry (UK), The Chaffey Review, Sixers Review, New Writing: The International Journal for the Practice and Theory of Creative Writing, Oak Bend Review, Routledge Taylor & Francis' Women's Studies and numerous other places. Inkwell Literary Management in New York represents his debut novel, All Things Await. He serves as Director of the Academic Resource Center at a private college in Virginia and teaches Creative Writing for Duke University's Talent Identification (Summer) Program during the summer.*

**Quantum Physics, Physics Fiction,  
and All Things Await**

Seth Clabough will read from "Quantum Physics, Physics Fiction, & All Things Await," which was published in Taylor & Francis' New Writing: the International Journal for the Practice & Theory of Creative Writing. The article explores how elements of quantum physics might be applied to the creation of a novel. It offers a brief overview of the 'Physics Fiction' tradition. The paper considers how such elements might be used in a novel and addresses how these elements can work to support the larger concerns of the text. The author provides specific examples of such applications in his own novel, All Things Await (represented by Inkwell Literary Management in New York).

**Publications:**

- The Hidden Anthology (University of Wales, 2009)

## **Cyrano oder Die Rückkehr vom Mond**

Was ist da los? Die Amerikaner verlassen den Mond, überlassen Nachzüglern den scheinbaren Begleiter der Erde. Zeit zum Rekapitulieren: An einem Sonntagnachmittag in Berlin, auf dem Feld des stillgelegten Flughafens Tempelhof, macht der Dichter Durs Grünbein eine folgenreiche Beobachtung. Was, wenn die Menschheit immer nur zurückkehren wollte von ihren Abenteuern der Raumerkundung? Gestern der Mond, morgen der Mars und übermorgen ...? Da begegnet ihm Cyrano de Bergerac, der spöttische Reisende durch die Planetenreiche der Imagination. Er ruft ihm über die Jahrhunderte hinweg zu: Es gibt nur eine Sensation, die der Heimkehr, alles andere sind Phantastereien! Und plötzlich öffnen sich alle Schleusen in Raum und Zeit, die Feier des Hierseins beginnt.

What's going on? The U.S. abandon the Moon and leave Earth's seemingly dead companion to the stragglers. Time for recap: It is a Sunday afternoon in Berlin at the defunct airport Tempelhof when poet Durs Grünbein makes a fateful observation. What if humanity only ever wanted to return from their adventures in space? Yesterday it was the Moon, tomorrow it will be Mars and the day after ...? Here comes Cyrano de Bergerac, the ever teasing traveller in the planetary fields of imagination. He calls to him over the centuries: There is only one sensation: coming home. Everything else is just fantasy! And suddenly all the locks in time and space open up and the celebration of the here and now begins.

### **Publications:**

- *Schädelbasislektion*. Gedichte. Suhrkamp Verlag, Frankfurt am Main 1991
- *Galilei vermisst Dantes Hölle und bleibt an den Maßen hängen*. Aufsätze 1989-1995. Suhrkamp Verlag, Frankfurt am Main 1996
- *Vom Schnee oder Descartes in Deutschland*. Suhrkamp Verlag, Frankfurt am Main 2003
- *Descartes' Devil - Three Meditations*, übersetzt von Anthea Bell, Upper West Side Philosophers, Inc., New York 2010
- *Der cartesische Taucher. Drei Meditationen*. Suhrkamp Verlag, Frankfurt am Main 2008
- *Aroma. Ein römisches Zeichenbuch*. Suhrkamp Verlag, Berlin 2010
- *Cyrano oder Die Rückkehr vom Mond*. Suhrkamp Verlag, Berlin 2014

### **DURS**

### **GRÜNBEIN**



*Durs Grünbein, Dichter, Übersetzer und Essayist, wurde 1962 in Dresden geboren, seit 1986 lebt er in Berlin. Für sein Werk wurde er vielfach ausgezeichnet, u. a. mit dem Georg-Büchner-Preis, dem Berliner Literaturpreis und zuletzt mit dem Tranströmer-Preis 2012.*

*Durs Grünbein, writer, translator and essayist, was born in Dresden in 1962, and lives in Berlin since 1986. For his work, he received numerous awards, including the Georg-Büchner-Preis, the Berliner Literaturpreis, and recently the Tranströmer-Preis 2012.*



## Programme for Friday, May 30, 2014

	<i>Moderation: Lothar Ley</i>	at Wassersaal der Orangerie
09.00	<b>Giovanni Vignale</b> Physics Department, University of Missouri	<i>The Beautiful Invisible. Creativity, Imagination and Theoretical Physics</i>
–	<b>Jay Labinger</b> Chemistry Department, CalTech	<i>The Role of Language in Conceptions of Atomic and Molecular Orbitals and Chemical Bonding Models</i>
11.15	<b>Klaus Mecke</b> Department Physik, FAU Erlangen	<i>Quantitative Metaphors: How Physics Discovers Synonyms in Narrated Nature</i>
11.15	<b>coffee break</b>	
	<i>Moderation: Dirk Vanderbeke</i>	at Wassersaal der Orangerie
11.45	<b>Susan M. Gaines</b> Fiction meets Science, Bremen	<i>Beyond Metaphor: Science as Subject in the Contemporary Literary Novel</i>
12.30		
14.00	<b>Winfried Thielmann</b> Germanistische Linguistik, Universität Chemnitz	<i>Physikalische Begriffsbildung aus linguistischer Sicht</i>
–	<b>Nikola Kompa</b> Institut für Philosophie, Universität Osnabrück	<i>Vom Nutzen und Nachteil metaphorischer Rede</i>
16.15	<b>Lutz Kasper</b> Didaktik der Physik, PH Schwäbisch-Gmünd	<i>Die Bedeutung von Subjektivierung und Ästhetisierung für den naturwissenschaftlichen Erkenntnisprozess</i>
16.15	<b>coffee break</b>	
	<b>Führung Albrecht-Dürer-Haus / Burgbesichtigung</b>	<i>Guided Tour Albrecht Dürer's House / Visit Nuremberg's Castle</i>
	<b>Lesungen</b> <i>Moderation: Peter Hull</i>	at Hausbrauerei Altstadt Hof Bergstraße 19, Nürnberg
19.30	<b>Ignatius McGovern</b> Physics Department, Trinity College, Dublin	<i>The Making of "A Mystic Dream of 4"</i>
–	<b>Peter Maria Schuster</b> History of Physics Group, European Physics Society, Vienna	<i>Wie kann man sich dem Schaffensvorgang und der Erkenntnisfindung eines Physikers annähern?</i>
23.00	<b>Johann Winkler</b> Salzburg	<i>Performance zu Peter M. Schuster: „Schöpfungswoche – Tag eins, Christian Doppler zur Huldigung“</i>
23.00	<b>Return trip to Erlangen</b>	

see abstracts on the following pages

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*Giovanni Vignale holds a professorship of Physics at the University of Missouri-Columbia, after having been assistant and associate professor since 1988. He has been a fellow of the American Physical Society since 1997.*

***The beautiful invisible. Creativity,  
imagination and theoretical physics***

Rather than describing the natural world “as it is”, physical science weaves some key observations about the world into a convincing and memorable narrative. It is not within its power to explain reality; but it can fictionalize it and thus make it understandable, sometimes even predictable. The fictionalized reality, subject to the intense pressure of internal and external constraints, is populated with abstract concepts such as particles, fields, and waves – all of which disappear if you look too closely. The mind naturally gravitates toward the patterns of maximum stability. Things that are mixed in the cauldron of the real world get separated and purified. The creation of new concepts is a form of mythopoesis. I present several examples that illustrate the fictionalization of reality in different

fields of physics: broken symmetry theory, quantum mechanics, density functional theory. I conclude by arguing that the quest for powerful literary expression of scientific concepts (Aestheticization) is much more than the effort to reach out to the public (Popularization): it is a deep-rooted and intrinsic aspect of the scientific enterprise. This talk is partly based on *The Beautiful Invisible. Creativity, Imagination and Theoretical Physics*, by G. Vignale (Oxford University Press, 2011)

**Publications:**

- *The Beautiful Invisible: Creativity, Imagination, and Theoretical Physics*, Oxford University Press, 2011.
- With Gabriele F. Giuliani: *Quantum Theory of the Electron Liquid*, Cambridge University Press, 2008.

## ***The Role of Language in Conceptions of Atomic and Molecular Orbitals and Chemical Bonding Models***

Lost in translation: How the way we talk about chemical bonds influences how we think about them. Chemists (and physicists) have a variety of mathematical, verbal and pictorial representations available for depicting atomic and molecular orbitals, and accounting for how they are put together to provide explanations of chemical bonding. While a straight mathematical description may be the most precise — Galileo famously wrote that the book of nature is written in the language of mathematics — few of us are sufficiently fluent in that language to speak it exclusively. The various verbal and pictorial models and representations could be compared to different languages; but a better analogy is to view them as different ways of translating the mathematical language into one we can more readily grasp. I will exemplify this assertion by considering a (friendly) dispute over the “best” choice for representing a molecular structure in light of the sorts of issues that arise in making choices while performing literary translations.

### **Publications:**

- “Awakening a Sleeping Giant?”, “Split Personalities, or the Science Wars Within”, and “Let’s Not Get Too Agreeable”. J. A. Labinger, in *The One Culture? A Conversation about Science*. J. A. Labinger and H. Collins, Eds., Chicago: University of Chicago Press, 2001.
- “Encoding an Infinite Message: Richard Powers’s *The Gold Bug Variations*.” J. A. Labinger, *Configurations: A Journal of Literature, Science, and Technology*, 1995, 3, 79–93.
- *Science as Culture: A View from the Petri Dish*.” J. A. Labinger, *Social Studies of Science*, 1995, 25, 285–306.
- “Atomic Theory,” “Detective Fiction,” “Entropy,” “Hoffmann, Roald,” “Lightman, Alan,” “Nuclear Energy and Nuclear Science,” “Powers, Richard,” and “Scientists’ Perspectives on Literature and Science.” J. A. Labinger, in *Encyclopedia of Literature & Science*, P. S. Gossin, Ed., Greenwood Press, Westport (CT), 2002.

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*Dr. Jay Labinger is the administrator of the Beckman Institute and a faculty associate in Chemistry at the California Institute of Technology. His interests are not confined to scientific topics only but also the borders between science and the humanities. He is a member of the Society for Literature, Science and the Arts (SLSA).*

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*Klaus Mecke holds a Chair for Theoretical Physics at the Universität Erlangen-Nürnberg. He studied physics and philosophy in Darmstadt and München and was a research assistant in Austin, Boston, Wuppertal and Stuttgart. He works on the physics of fluids and biological systems and applies geometric methods in material science, image analysis and astronomy.*

**Quantitative metaphors:  
how physics discovers synonyms in  
narrated nature**

Metaphors are not only rhetorical figures of speech but important cognitive concepts that carry meaning between different realms of experience by asserting a *similarity*. Physics has found a genuinely unique way of connecting different fields of experience and constituting *equivalence*: measurement. A physical quantity ('energy', 'force', 'current') is a quantitative metaphor that uses a **measurement narrative** to transfer from a field of experience onto singular events in nature. Equal number is the *tertium comparationis* allowing a relation between quantitative metaphors which would otherwise be absolutely disconnected realms: 'curvature' is 'energy' (Einstein's law of gravity), 'force' is 'momentum flow' (Newton's law of motion), 'electric current' is 'magnetic circulation' (Maxwell's law of electrodynamics).

Laws of nature can so be understood as *synonymous* quantitative metaphors, where the redundancy of experiences, i.e. equivalent meaning of quantitative metaphors is discovered solely by equal numbers of

performed measurement narratives.

Mathematical-ontological metaphors such as 'point particle', 'vector field' or 'quantum state' translates quantitative metaphors in mathematical language, where logic rules a formal system and synonymous quantitative metaphors appear as equations. In these **model narratives** the redundancy is explained as *symmetry* of and the equivalence as *identity* of mathematical objects.

Physical aesthetic studies the harmony of these fundamental figures on the mathematical stage and clarifies their importance for human experiences, world views and ethics. Since metaphors are a literary method for seeing the similar in the different, it would be interesting to analyse how quantitative metaphors are used as tropes in literary texts.

**Publications:**

- Das physikalische Modell – eine quantitative Metapher? In: Bergem et al. (ed.): Metapher und Modell. Trier 1996, p. 225-252.
- Physik im Spiegel der Literatur. In: Didaktik der Physik, 1998, p. 61-76.
- Narratives in Physics: quantitative metaphors and FORMULA € tropes? In: Narrated Communities and Narrated Realities (editor(s): Hermann Blume), in press, Amsterdam 2014.
- With Aura Heydenreich: Quarks and Letters. Naturwissenschaften in der Literatur und Kultur der Gegenwart. Berlin, to be printed 2014
- With Aura Heydenreich: Physik und Poetik: Gegenwartsautoren und Gegenwartsautorinnen im Dialog. Interviews with Thomas Lehr, Durs Grünbein, Raoul Schrott, Ulrike Draesner, Jens Harder, Ulrich Woelk, Juli Zeh, Michael Hampe, to be printed 2014.

## ***Beyond Metaphor: Science as Subject in the Contemporary Literary Novel***

A novelist is exploring human relationships to the natural environment in the late twentieth century and finds herself writing about science. It's a story of creativity and discovery, doubt and faith, personal obsession and universal consequence—a grand topic for a novel. But what does it mean to create a novel that takes science, writ large, as its main subject matter, a novel that is about doing science and the people who do it and the knowledge produced and what happens to that knowledge when it goes out into society? Can the novel as a form handle that? Can it deal with characters who are defined by their daily work and stories that can't be told without exploring the substance and activities of that work in intimate detail? How can we experience the world from the perspective of a character who thinks in the iconic languages of chemistry or mathematics, if we, as readers, have no concept of such languages? How, in general, does the novel deal with abstract specialized knowledge? And how, in particular, does this oh-so-subjective of art forms deal with knowledge that is, by definition, construed as objective? Where are the precedents, where are the models?

In this talk, I'll tell the story of a certain kind of novel that has gained ground in the Anglo-Saxon literature over the past twenty years. Novelists are writing about the experience of knowledge that is generally the privilege of some small sector of society. We are writing about work. And, we are writing about science. I'll tell my story in the first person, from the perspective of a novelist, reader, and lapsed geochemist, using examples from my own work and raising questions that I hope literary scholars, philosophers, and sociologists may someday be able to answer. Is the ever-flexible evolving form of the novel allowing us to write about science, or is the urge to write about science changing the form of the novel? What does this imply about or for readers? Can the magical power of the novel to generate empathy with its subject propagate new understandings of science?

### **Publications:**

- (with G. Eglinton and J. Rulkötter) *Echoes of Life: What Fossil Molecules Reveal About Earth History* New York, Oxford: Oxford University Press (2008) 355 pp.
- *Carbon Dreams* Berkeley: Creative Arts Book Company (2001). 351pp.
- "Sex, Love, and Science." *Nature* 413 (2001): 255.

### **SUSAN M. GAINES**



#### **Science Meets Fiction**

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*Susan M. Gaines is a novelist and science writer, "Writer in Residence" at the University of Bremen, and founder of the interdisciplinary program "Fiction Meets Science: The World of Science under the Literary Microscope." She did graduate work in organic chemistry at the Scripps Institution of Oceanography, before abandoning the laboratory for literary pursuits. Her short stories have appeared in many literary magazines and anthologies. Her novel *Carbon Dreams* was an experiment with science in literary fiction, and her book, *Echoes of Life: What Fossil Molecules Reveal about Earth History*, was an experiment with narrative and literary prose in the factual presentation of scientific results.*

**PROF. DR. WINFRIED  
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*Prof. Dr. phil. habil. Winfried Thielmann first studied Physics, then German as a Foreign Language / Modern German Literature and Musicology at the University of Munich. In 2009 he obtained a professorship at the TU Chemnitz as professor for German as Second and a Foreign Language.*

***Concept Formation in Physics From a Linguistic Perspective***

Concepts are — mentally available — complexes of knowledge which are labeled with linguistic expressions and which in the sciences in certain cases require a terminological designation. It is therefore the terminological garb in which the linguistic side of a science becomes especially manifest. This is true for physics as well. It seems that behind such terms as Hall effect, quantum leap, or half-life period — which under certain circumstances that merit further investigation have made it into the general language — that is concealed which makes physics into physics and in which its fascination for non-physicists lies. This, however, is exactly not what this presentation is about. It is rather about the question of what it is that is so specific about physics with respect to its conceptual and terminological side. By means of certain concepts and how they are, at times, designated with relatively inconspicuous terms such as body, velocity, and force, this paper will analyze those conceptual structures and mental pro-

cesses which are characteristic for the specific relationship physics has with reality and its perception.

**Publications:**

- Thielmann, W. (in Vorb.) Zur Einzelsprachenspezifität wissenschaftlichen Sprachausbaus im Rahmen des genealogischen Funktionsbereichs von Sprache. In: Linguistik online
- Thielmann, W. (im Druck) Zur erkenntnisleitenden Funktion sprachlicher Mittel des Symbolfeldes in der Wissenschaft. In: Heller, D. (Hg.) Mehrsprachige Wissenschaftskommunikation. Heidelberg: Synchron
- Thielmann, W. (2008e) Begrifflich angeleitete Natursimulation im physikalischen Experiment von Galilei bis Hertz – zur historischen Rekonstruktion physikalischer Grundbegriffe. In: Müller, E./Schmieder, F. (Hgg.) Begriffsgeschichte der Naturwissenschaften. Zur historischen Dimension naturwissenschaftlicher Konzepte. Berlin/New York: de Gruyter, 215-222
- Thielmann, W. (2007b) Alltagssprachen als wissenschaftliche Ressource. In: Deutsch als Wissenschaftssprache. Sektion III „Wissenschaft ist mehrsprachig“ im Rahmen des Festivals „Die Macht der Sprache“. Berlin, Akademie der Künste, 15.-16. Juni 2007. Bonn: DAAD, 45-56

## What purposes do metaphors serve?

My aim in the paper is to investigate into the functions metaphors might serve. According to a traditionally influential idea metaphors have, at best, ornamental value; they are poetic or rhetoric devices, used to please or maybe even to swathe people. Current research in philosophy, linguistics and psychology shows the need for a refined picture of what purposes metaphors might serve. Expressions are often used metaphorically in order to conceptualize abstract and mental phenomena. The expressions thereby employed are often taken from the realm of sense experience. That is why we are feeling blue, or complain about someone being cold, and so on. And that also allows us to use metaphors in explaining human behaviour. We say that a friend of ours broke down under pressure, thereby exploiting the metaphor of the mind as a brittle object. Yet even in the natural sciences metaphors have added epistemic value, or so I will claim. They fill conceptual gaps and are often used in order to conceptualize phenomena that are only partially understood. They may thereby get to direct the scientist's attention and even guide research activities.

### Publications:

- Kompa, N (2010). Contextualism in the Philosophy of Language. In: Klaus Petrus (ed.): Meaning and Analysis: New Essays on H. P. Grice. Pelgrave Macmillan, 288-309.
- Kompa, N & Meggle, G (2011). Philosophical Foundations: Pragmatics in Modern Philosophy of Language. In: Handbook of Pragmatics, Vol 1. Berlin/Boston: de Gruyter Mouton; series editors: Wolfram Bublitz, Andreas H. Jucker and Klaus P. Schneider, 203-228.
- Kompa, N (2011). Die anthropologische Funktion der Sprache. In: Jan Claas Freienstein, Jörg Hagemann & Sven Staffeldt (eds.): Äußern und Bedeuten – Festschrift für Eckard Rolf. Tübingen: Stauffenburg Verlag, 23-35.
- Kompa, N, Regine Eckardt, Henrike Moll & Susanne Grassmann (2013). Sprache/Sprach–verstehen/sprachliche Bedeutung/Kontext. In: Achim Stefan & Sven Walter (eds.): Handbuch Kognitionswissenschaft. Stuttgart/Weimar: J. B. Metzler, 432-444.
- Kompa, N. (2014). Knowledge in Context. *Rivista Internazionale di Filosofia e Psicologia*. Vol 5, No 1: pp. 58-71. DOI 10.4453/rifp.2014.0005; wiederabgedruckt in Hans Jörg Sandkühler (ed.) (2014): *Wissen – Wissenskulturen und die Kontextualität des Wissens*. Frankfurt/Main: Peter Lang, 181-198.

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*Lutz Kasper's research fields are narration and physics, conceptual metaphors in the disciplinary and educational language of physics, authentic contexts for physics education, and the history of the natural sciences.*

***The Meaning of Subjectification and Aestheticization for the Process of Knowledge Development in the Natural Sciences***

The public perception of the natural sciences, especially physics, is characterized by stereotypes and false attributions. Related to this is the empirically proven unpopularity of physics as school subject. A number of learners could benefit from a gentle introduction to this system of theories based on abstract concepts. Such approaches could be conceptualized in a more subjective-aesthetic way—as alternative to the more rational discipline-specific approaches. This is also the original form of science: the stammering interior monologue, the prosaic (laboratory) diary, the jungle of flowering metaphors. Only gradually, and at the earliest with the onset of an incipient understanding, are scientific concepts

shaped and brought into relation with each other. The development of knowledge is thus always connected to individuals, their internal perspectives, emotions, and interactions. In this presentation, selected narrative approaches to physics will be presented and discussed.

After a successful entry into the theoretical framework of physics, laypeople will endeavor to comprehend its broad blueprint. What can be helpful is the realization that some parts are quite similarly structured and can even be very similar to completely different things. This is where metaphors and analogies come in. Conceptual metaphors such as these will be ascribed with a special significance by the author, both in relation to the history of science, as well as individual knowledge development. In this talk, representative results of metaphorical analyses from German and English school books and academic textbooks will be presented.

**Publications:**

- “Émilie auf dem Weg zur Wärmestrahlung – ein narrativer Unterrichtseinstieg.” Unterricht Physik 25.139 (2014): 27-31.
- “Die inszenierte Kontroverse – Narrative Zugänge zur Physik.” Lernen und Erzählen interdisziplinär. Eds. Olaf Hartung, Ivo Steininger, and Thorsten Fuchs. Wiesbaden: Springer VS, 2011. 159-70.
- “Analogien, Metaphern und Modelle der Physik.” Unterricht Physik 22.122 (2011): 32-36

## ***The Making of “A Mystic Dream of 4”***

*A Mystic Dream of 4* is the title of a sonnet sequence based on the life of the 19<sup>th</sup> century Irish mathematician & poet, William Rowan Hamilton [1]. In this presentation I will explain why I undertook this project, beginning with a brief history of Hamilton's life and with some emphasis on his relationship with the Romantic poet, William Wordsworth. I will then discuss how the number 4 (of Hamilton's quaternion algebra) is reflected in the structure of the sequence and will conclude by reading a short selection of the sonnets.

[1] *A Mystic Dream of 4* (Quaternia Press 2013)

*A Mystic Dream of 4* ist der Titel einer Sonettreihe, die auf dem Leben des irischen Mathematikers und Dichters William Rowan Hamilton aus dem 19. Jahrhundert aufbaut. Während dieser Lesung wird Iggy McGovern die Hintergründe seines Projekts erläutern und einen kurzen Abriss über Hamiltons Leben bieten, wobei er unter anderem auf seine Beziehung zum Romantiker William Wordsworth eingehen wird. Anschließend wird er erklären, wie sich die Nummer 4 (aus Hamiltons Quaternionen-Algebra) in der Struktur der Sonettreihe wiederfindet und abschließend eine kleine Auswahl der Sonette vorlesen.

### **Publications:**

- 'Science and Poetry – not so different?' in *On Science & Literature* (Four Courts Press 2007)
- 'Strange Meeting: Science Meets Poetry' in *Poetry Ireland Review* 108 2012
- 2012: *Twenty Irish Poets Respond to Science in Twelve Lines* ed: Iggy McGovern (Dedalus Press cum Quaternia Press 2012)
- *Science Meets Poetry 3* ed: Jean-Patrick Connerade & Iggy McGovern (Euroscience 2012)

### **PROF. IGNATIUS MCGOVERN**



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*Iggy McGovern graduated in Physics from Queen's University, Belfast in 1970, where he also obtained a PhD in Physics in 1977. He has worked as Lecturer in Physics at Trinity College and at the Universities of Pennsylvania and Wisconsin. He is currently Professor in the School of Physics and Fellow of Trinity College. He holds several fellowships, among these one at the Fritz-Haber-Institut, the Magdalen College, Oxford and a Distinguished Fellow at the Institute of Advanced Studies in La Trobe University, Melbourne.*

*Iggy McGovern wurde in Coleraine geboren und wuchs in Belfast auf. Er promovierte an der Queen's University in Belfast in Physik und war Professor am Trinity College in Dublin, bis er 2013 in den Ruhestand ging. The King of Suburbia wurde mit dem Glen Dimplex-Preis für Dichtung ausgezeichnet, zusätzlich erhielt er den Hennessy-Preis für Dichtung und ein Stipendium des Ireland Chair of Poetry.*

**DR. PETER M. SCHUSTER**



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*Dr. Peter M. Schuster is a science writer, essayist, poet and novelist who holds a doctor's degree in Physics. In 2007 he became the President of the Group "History of Physics" of the European Physical Society.*

*Dr. Johann Winkler is medical director of the private clinic in Salzburg. Since 1993 he has appeared as an extra-professional actor in various productions for theater and film and supports Dr. Peter M. Schuster as a performer and friend.*

*The illustrations in "Die Schöpfungswoche" are provided by Helmut Krumpel, who studied at the University of Applied Arts in Vienna. He has received several awards for his works, including the Theodor Körner-Preis in 1977.*

*Peter Maria Schuster wurde 1939 in Wien geboren. Nach einem Studium der Geschichte, Japanologie, Mathematik und Physik in Wien promovierte er 1967 zum Dr. phil. in Physik. Seit 1988 lebt er als freier Schriftsteller abwechselnd in Pöllauberg/Steiermark, Wien und Donegal/Irland.*

## ***How can one approximate the creative process and the pursuit of knowledge of a physicist?***

After having acquired the basic foundations to answer this question through his work as physicist, historian, essayist, and screenwriter, the author reports on what he sees as the most suitable approach—the lyrical transposition. This will be briefly substantiated with an example from his series of long poems, "Die Schöpfungswoche" ("Creation Week"), which undertakes to introduce one physicist for each day of creation in six volumes.

Afterwards there will be a performance on the basis of the first volume, "Schöpfungswoche – Tag eins, Christian Doppler zur Huldigung" ("Creation Week – Day One, In Homage to Christian Doppler"), presented by the actor and doctor Johann Winkler. The relevant text excerpts will be made available in German, English, and French.

Wie kann man sich dem Schaffensvorgang und der Erkenntnisfindung eines Physikers annähern? Nachdem der Autor sich als Physiker, Historiker, Essayist und Filmautor eine Basis dafür erarbeitet hat, berichtet er über die seines Erachtens angemessenste Annäherung – die lyrische Umsetzung. Dies wird anhand eines Beispiels aus seiner Reihe von Langgedichten aus „Die Schöpfungswoche“, die in sechs Bänden zu jedem Schöpfungstag einen Physiker vorzustellen unternimmt, kurz begründet.

Im Anschluss daran wird (fußend auf dem ersten Band: „Schöpfungswoche – Tag eins, Christian Doppler zur Huldigung“) eine Performance durch den Schauspieler und Arzt Dr. Johann Winkler dargeboten. Die entsprechenden Textauszüge werden in Deutsch, Englisch und Französisch bereitgestellt.

### Publications:

- „Physik mit einem Quäntchen Glück“ (Max Planck), in: Der Standard, Forschung spezial, Mittwoch, 23. April 2008, S. 18;
- „Boltzmann und die Ewigkeit“, in: Der Standard, Album A4, 19.08.2006
- Unter dem Kreuz, Living Edition, 1995
- "Der Einfluss Christian Dopplers auf das Denken und die experimentelle Arbeit Ernst Machs", S. 257-273, in: 2nd EHO P Conference, Innsbruck/Austria, 2009, Living Edition, 2012: Proceedings of the Second European History of Physics (EHO P) Conference, a joint conference of the associations: History of Physics Section of the Austrian Physical Society (ÖPG), Austrian Society for Astronomy and Astrophysics (ÖGAA), Swiss Physical Society (SPG), History of Physics Group of the European Physical Society (EPS/HOP), Victor F. Hess Society

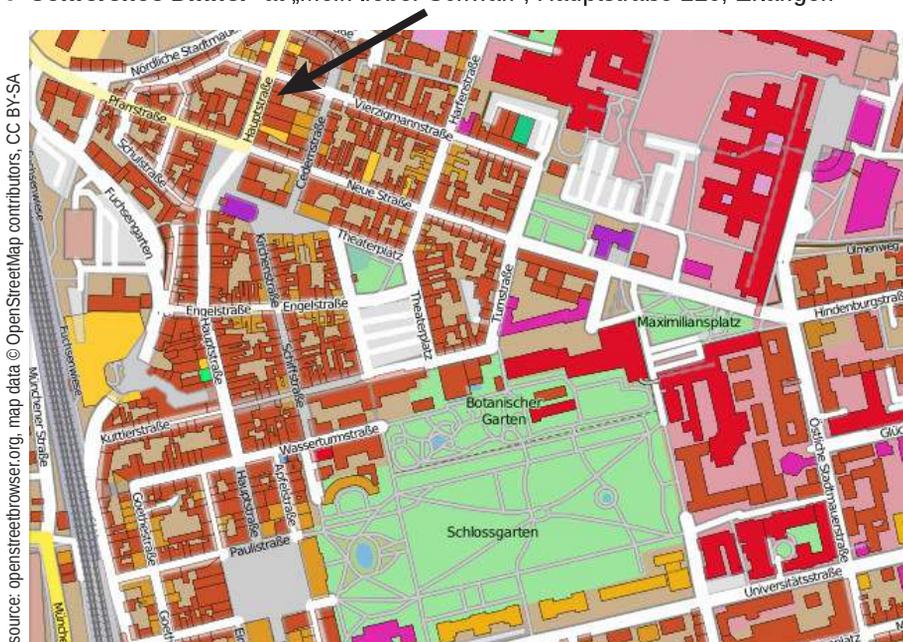
## Programme for Saturday, May 31, 2014, page 1/2

	<i>Moderation: Christine Lubkoll</i>	
09.00	<b>Maximilian Bergengruen</b> Institut für Germanistik, KIT (Karlsruhe)	<i>Physik der Metaphysik: Zur Technik der Geistererscheinungen in Gryphius' „Catharina von Georgien“ und „Carolus Stuardus“</i>
–	<b>Barbara Wiedemann</b> Deutsches Seminar, Universität Tübingen	<i>„In der Blasenkammer“. Paul Celans physikalische ‚Anreicherung‘</i>
11.15	<b>Bernadette Malinowski</b> Institut für Germanistik, Universität Chemnitz	<i>Literarische Epistemologie: Daniele DelGiudices „Atlante occidentale“</i>
11.15	<b>coffee break</b>	
	<i>Moderation: Dirk Vanderbeke</i>	
11.45	<b>Michael Gamper</b> Deutsches Seminar, Universität Hannover	<i>Ästhetische Eigenzeiten der Physik</i>
–	<b>Aura Heydenreich</b> Department Germanistik, FAU Erlangen	<i>Gödels Zeitschleifen und Bachs „Musikalisches Opfer“ als Modelle der Identitätskonstruktion in Richard Powers' „The Time of Our Singing“</i>
13.10	<b>Sektion I</b>	
	<i>Moderation: Angelika Lampert</i>	at Wassersaal der Orangerie
14.30	<b>Sonja Front</b> English Cultures and Literatures, Silesia, Poland	<i>Temporality in British Quantum Fiction – an Overview</i>
–	<b>Carlos Gámez Pérez</b> Department of Modern Languages, U. of Miami	<i>Postmodern Physics in Contemporary Spanish Literature: The case of Agustín Fernández Mallo</i>
15.40	<b>coffee break</b>	
16.10	<b>Nina Engelhardt</b> a.r.t.e.s. Grad. Sch. for the Humanities, Cologne	<i>From Universal Force to Fictitious Force – Gravity in Thomas Pynchon's „Gravity's Rainbow“</i>
–	<b>Marta Silvera, Juani Guerra &amp; Adán Martín</b> Filología Moderna, Las Palmas de Gran Canaria	<i>Artphysics at work: A time-based cognitive mapping of Thomas Pynchon's conceptual organization of entropy</i>
17.20		

see abstracts on the following pages

Programme for Saturday, May 31, 2014, page 2/2

<b>Sektion II</b>	
Moderation: Harald Neumeier at Musiksaal der Orangerie	
14.30	<b>Laetitia Rimpau</b> Allg. & Vergl. Literaturwissenschaft, Uni Frankfurt <i>Wie Dichter Astronomiegeschichte erklären: Dantes „Convivio“ und Keplers „Rudolfinische Tafeln“</i>
–	<b>Rudolf Drux</b> Inst. für deutsche Sprache und Literatur, Uni Köln <i>Von der „Atomzertrümmerung“ und den „Bewegungen der Himmelskörper“. Die Kernphysik im literarischen Spiegel frühneuzeitlicher Astronomie</i>
15.40	<b>coffee break</b>
16.10	<b>Clemens Özelt</b> Deutsches Seminar, Universität Zürich <i>Die Evidenz im Blickwechsel: Galileis Dialoge als Gattungsmodell im 20. Jahrhundert</i>
–	<b>Susanne Hartwig</b> Romanische Literaturen, Universität Passau <i>Der 10. September 2001 oder Attraktoren in der Interpretation von Gegenwartsliteratur</i>
18.30	<b>Klaus Mecke / Christine Lubkoll / Aura Heydenreich</b> Departments Physik / Germanistik, FAU Erlangen <i>Physics and Literature – Discussion on future projects</i>
20.00	<b>Conference Dinner</b> at „Mein lieber Schwan“, Hauptstraße 110, Erlangen



see abstracts on the following pages

**Physik der Metaphysik:  
Zur Technik der Geistererscheinungen  
in Gryphius' „Catharina von  
Georgien“ und „Carolus Stuardus“**

In my contribution I intend to examine the technical and ultimately physical foundations of Gryphius's dramatic writings. Special focus will thereby lie on those scenes from *Catharina von Georgien* and *Carolus Stuardus* in which ghosts appear. The metaphysical subject matter of the plays, which becomes noticeable in those scenes, require, as will be shown, the highest technical application that could have been demanded of the (school theater) stage at the time. In these scenes, the antagonisms between the metaphysical and the physical collide to full effect. Building upon these observations, I want to show that Gryphius developed his entire model of dramatic writing in relation to the technical possibilities of the theater.

**Publications:**

- Jenseits der empirischen Wissenschaften. Literatur und Reisebericht im 18. und frühen 19. Jahrhundert – Au-delà des sciences expérimentales. Littérature et relation de voyage au XVIIIe siècle et autour de 1800 – Beyond Empirical Sciences. Literature and Travel Report in the 18th Century and around 1800, hg. von M. B., Markus Winkler, François Rosset, Fribourg 2012 (= Colloquium helveticum 42 [2011])
- Neurasthenie. Die Krankheit der Moderne und die moderne Literatur, hg. von M.B., Klaus Müller-Wille, Caroline Pross, Freiburg i. Br. 2010 (Rombach, „Litterae“)
- „Moosbruggers Welt. Zur Figuration von Strafrecht und Forensik in Robert Musils 'Der Mann ohne Eigenschaften'“, in: Lilith Jappe, Olav Krämer, Fabian Lampart (Hg.), Figurenwissen. Funktionen von Wissen bei der narrativen Figurendarstellung, Berlin 2012, S. 324-344
- (im Erscheinen) "Übernatürliches (Hermetik, Schwarze Magie, Gespenster, Wahn)", erscheint in: Nicola Kaminski (Hg.), Andreas Gryphius-Handbuch, Stuttgart, Weimar 2014

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*Prof. Dr. Maximilian Bergengruen works as a professor for the Department of German Studies at the University of Karlsruhe. He has been a fellow of the DFG and is a board member of the "Grimmelshausen-Gesellschaft". He co-edits the "Hofmannsthal-Jahrbuch zur Europäischen Moderne" and the literary book series "Litterae".*

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*Dr. Barbara Wiedemann is a lecturer at the University of Tübingen. She has edited several volumes of research on Paul Celan as well as editions of Celan's work. For the integration of readings from diverse fields of science, see her work "Lesen Sie! Immerzu nur lesen': Celan-Lektüre und Celans Lektüren" (Poetica 36, 2004, 169-191) as well as the annotations especially to the poems after 1965 in Paul Celan: Die Gedichte. Kommentierte Gesamtausgabe in einem Band (edited and annotated by Barbara Wiedemann, Frankfurt a.M. 2003).*

**"In der Blasenkammer" ("The Bubble Chamber"):  
Paul Celan's Physics 'Enrichment'**

The poet Paul Celan is no 'layperson' in the field of physics. After his preparatory year in medicine "BCP" (biology, chemistry, physics) in France before the war, the natural sciences remain a part of his thinking until the end. Indeed, physics becomes only clearly visible in his work through its poetics, which in the late 1950s centers around optics. Hereby it becomes apparent that Celan truly knows what he is talking about. His library, bequeathed to the German Literature Archive in Marbach, is evidence of a very wide interest—from the ancient foundations of physics with the pre-Socratic philosophers to the developments in theoretical as well as applied physics in the 20th century (nuclear physics, quantum theory), and the possibilities of representing them through language. His poems reflect these readings: more than a few concepts, which were denounced rather than described by his contemporary readers as neologisms, i.e. Celanian inventions, are concepts from the various fields of the natural sciences, also from physics, and physical research and its fields of application. In the last years of his life, his sources were often popular scientific texts from corresponding book series (Sammlung Göschen) or from the German daily and weekly press. To the poet, the scientific concepts are not only peculiar or interesting seeming words which he brings in as phonetic shells to be filled with new contents. He uses them much more as technical terms according to

their respective definitions: they bring their scientific context into the poem. And within the poem, the concepts are charged with additional meanings which correspond with the linguistic form in its component parts or develop in relation to the other elements within the poem. This method of enrichment, typical for Celan, will be central to my contribution, after an exposition of his 'optical' poetics. The chapter on physics intended for the Celan Handbook (ed. by M. May, P. Goßens, and J. Lehmann, Stuttgart, 2012) was not realized, nor has the subject been elaborated on elsewhere. This conference is the perfect forum to make up for this lack.

**Publications:**

- "Ein Faible für Tübingen". Paul Celan in Württemberg - Deutschland und Paul Celan, Tübingen 2013.
- Paul Celan: Das Frühwerk, hrsg. von Barbara Wiedemann, Frankfurt 1989.
- »uns Überlebenden«. Günter Grass häutet seine Zwiebel, in: Treibhaus 9, 2013, S. 105-132.
- Balzac in Weinheim (= Spuren 97), Marbach am Neckar 2013.

**Literary Epistemology: Daniele Del Giudice's "Atlante Occidentale" (Eng. trans. "Lines of Light")**

With the example of Del Giudice's novel, *Atlante Occidentale* (1985), as well as with recourse to the tendencies of postmodern science as described by Lyotard, it will not only be shown how natural scientific insights and its processes of knowledge development can be represented in literary figurative language or as a system of poetics, but if and how the epistemological connections immanent to these scientific insights and processes themselves (such as the connection between anaesthetization and aestheticization) become poetically and poetologically explicated and contemplated. Del Giudice's novel distinguishes itself through its differentiatedly translated 'meta-epistemic' interest: It tells the story of the conditions for the generation of natural-scientific/physical knowledge in its specific contexts of production. Hereby it is exactly those aspects of the epistemic procedures that remain hidden in conventional natural scientific research and are thus not published which become the emphasized subject of the literary narrative: the technological, theoretical, and aesthetic arrangements of discursive, or rather 'viscursive' (Knorr-Cetina), and hermeneutic practices and their relevance for the development and standardization of fields of knowledge, as well as for the formation and production of theories and insights. The mode of transfer from science to literature can be described to that effect, that, in the case of a primarily epistemologically functionalized 'scientia poetica,' the fictionalization of propositional insights are exactly not foregrounded, but rather the fictionalization of the inherent fictionality of these insights.

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**Publications:**

- Hg. mit Jörg Wesche u. Doren Wohlleben: *Fragen an die Sphinx. Kulturhermeneutik einer Chimäre zwischen Mythos und Wissenschaft*, Heidelberg 2011 (in Vorbereitung).
- Hg.: „Im Gespräch: Probleme und Perspektiven der Geisteswissenschaften“ (= *Schriften der Philosophischen Fakultäten der Universität Augsburg*, Bd. 72), München 2006.
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## ***Aesthetic Proper Times of Physics***

Experimental physical systems should, as postulated by Newtonian physics, reach their results independently from time and space. It is upon this assumption that the universal validity of their laws and thus also the prestige and power of the discipline rests. In one such perspective on the practices of physics, observation is only permitted under disciplined and standardized conditions, and the formation of exceptional times within the experimental process are foreclosed. A look at the practices and procedures of physics, however, reveals a substantial contribution from aesthetic and aesthetic elements, as well as proper time structures to the acquisition of knowledge. Especially in the formative stages of the discipline, these thematics played a significant role in the published texts as well. It is not only the practical turn in the history of science that has emphasized this moment in physics. It is also because of discoveries in physics in the 20th century that the observer and experimenter stepped back into focus and time lost its absoluteness and unity. Instead it

counted as another variable contingent on systems such as nature, the individual, and society. Albert Einstein relativized Newton's absolute time insofar as it could no longer come about without relation to the objects and processes examined within physics. Subsequently, Hermann Minkowski defined time as local proper time in relation to the relative velocity of an inertial system for which in 1908 he coined the term "Eigenzeit" (proper time). This paper traces these aspects of the history of physics and inquires into its consequences and effects on the problematics of observation in physics and the aesthetics of literary texts.

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**Gödel's Closed Timelike Curves and Bach's  
The Musical Offering as Configuration  
Models for Narrative Identity Constructions  
in Richard Powers' The Time of Our Singing**

Richard Powers' novel "The Time of Our Singing" situates the problematics of narrative identity on a field of tension between continuity and change and exposes them in a narrative structure that builds on the principles of physics and on the artistic constructions of music. Regarding the physics, it is mainly Kurt Gödel's model of *Closed Timelike Curves* as cosmological solution to Einstein's field equations in the theory of general relativity that functions as structural template for the novel, as well as the principles of time dilation and space contraction. With respect to music, it is the basic procedures of the fugue and the canon that are employed in Johann Sebastian Bach's contrapuntal compositions in general as well as in *The Musical Offering* specifically: augmentation, diminution, inversion that function as structural references.

The goal is to show how the narrative configuration of the novel, inspired by both music and physics, gives rise to identity-constructing elements for the yet to be developed hybrid community. The analytical foils, which serve as a background for the analysis of the aporia of identity formation in defiance of racial discrimination, are Paul Ricoeur's concept of the narrative identity of oneself as another and René Girard's studies on mimetic desire. The question the novel asks, both in terms of content and aesthetic organization, is: How can the perilous project of building a new society, whose boundary-crossing tendencies are socially sanctioned, be made plausible not as an abrupt change, but as a continuous transition that could gradually find social acceptance? With which methods can a work of art be created, so that its aesthetic foundation can make permanence, recognizability, and continuous transformation simultaneously conceivable?

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***Temporality in British Quantum Fiction – an Overview***

Relativity theory and quantum mechanics have undoubtedly had a profound impact on 20<sup>th</sup> and 21<sup>st</sup> century thought and art. Among other things, they have influenced the notions and conceptualizations of time in western culture and contributed to the emergence of time as one of the main concerns in postmodern literature. The temporal structure of the novel has been an aesthetic response to the altered understanding of time, but also a part of a broader cultural *Zeitgeist*, a change of worldview taking place in various fields simultaneously. Time has become a multi-layered structure, embracing cosmic time, public and historical time as well as volatile psychological time. The paper proposes an overview of modern conceptualizations of time and literary strategies to address them, focusing on the literary responses to new physics in British physics fiction/quantum fiction. Quantum fiction, a literary genre encompassing stories which depict the experience of reality as described by new physics, manifests itself as a response to the crisis of representation; to the need, recognized by many authors and critics, for creating a new language, literary technique and genre to depict quantum reality. While scientists leave Einstein's theories in the macroscopic scale and quantum mechanics in the microscopic one, both divorced from everyday reality, fiction writers adjust them to the human scale and effect their import on the everyday reality

of the characters. The notions of new physics referring to time and temporality that writers rework aesthetically include relativity theory, Hugh Everett's multiverse, the arrow of time, superstring theory and holism. I will discuss literary techniques that enact the representations of these physical theories in fiction and how they problematize the questions of relativity and subjectivity of time, temporality of psyche, and the relation between time and human identity.

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- Sonia Front, Katarzyna Nowak, red. *Interiors: Interiority/Exteriority in Literary and Cultural Discourse*, Newcastle upon Tyne: Cambridge Scholars Publishing, 2010.
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## ***Postmodern Physics in Contemporary Spanish Literature: The case of Agustín Fernández Mallo***

Physics has interacted with or been represented in Spanish literature very rarely until recently. Of the few Spanish writers interested in science, only one was tangentially associated with Physics: José de Echegaray, playwright and 1904 Nobel Prize Winner in Literature and Professor of Mathematics and Physics. Notwithstanding his day job as a mathematician and physicist, Echegaray's theatre never addressed scientific concerns directly. For this reason, it is impossible to think about Echegaray as a scientific writer. In order to explain the dearth of Spanish authors interested in the sciences, it is important to remember the difficult relationship between Spanish society and science and technology. As a consequence, "La polémica de la ciencia española" (the controversy of Spanish Science), one of the main themes in the historiography of science in Spain, tries to make sense of the weak cultural influence of science in Spanish society.

In contrast to past Spanish literature, today there is an important group of authors who not only consider science in their works of fiction, but for whom physics, specifically, is their main influence. This is the case of Agustín Fernández Mallo, physicist, poet, and fiction writer, who achieved public visibility with his trilogy of novels, *Proyecto Nocilla*. His public success revolutionized Spanish Peninsular literature in the first decade of the twenty-first century. His use of physics as a main influence and overarching structuring principle in his literary work, gain him critical recognition as the central figure in a new literary group called—after Mallo's trilogy—"the Nocilla generation."

I propose to analyze the influence of physics in Fernández Mallo's writing, especially in his three novels: *Nocilla Dream*, *Nocilla Experience* and *Nocilla Lab*. I will begin by analyzing Fernández Mallo's poetics—closely related to science in general and to physics in particular—by addressing his theoretical essays published at the same time than his narrative works. Second, I will study the profound influence of physics in Fernández Mallo's novels by focusing on his use of technological and scientific elements, scientific metaphors, and narrative structures. I will demonstrate that the physics that influences Fernández Mallo produces a very particular vision of creative writing.

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***From Universal Force to Fictitious Force – Gravity in Thomas Pynchon's "Gravity's Rainbow"***

Pynchon's 1973 novel *Gravity's Rainbow* is an exceptionally fruitful example of physics in writing and of literary reflections on the relationship of science and literature. It has commonly been noted that the poetic image of the rainbow is related to the deadly V2 rocket and to mathematical equations describing its flight. This paper focuses on the more surprising converse connection of gravity with fiction.

*Gravity's Rainbow* traces developments in the understanding of gravity from the seventeenth to the twentieth centuries, that is, from Newton's formulation of the universal force and Leibniz's deploring belief in the "strange fiction to regard all matter as having gravity", to the notion of gravity as a fictitious force. The novel uses physical imagery and the historically specific perspectives to explore ethical questions and to provide a physico-ethical explanation of the main character's disappearance from the text. Moreover, the novel's veiled references to Einstein's relativity theory, particularly its engagement with gravity in inertial and non-inertial frames of reference, illuminate the

distinctive novelistic form. However, the use of physical concepts as imagery and structural devices also works to qualify Pynchon's widely noted questioning of novelistic ontology and postmodernist style: discrediting loose understandings of Einstein's theory such as "everything is relative", *Gravity's Rainbow's* well-informed engagement with physics argues for the precedence of ethical considerations over questions of ontology.

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- 'The Role of Mathematics in Modernist Utopia: Zamyatin's *We* and Pynchon's *Against the Day*'. *Utopianism, Modernism, and Literature in the Twentieth Century*. Ed. Alice Reeve-Tucker and Nathan Waddell. Basingstoke: Palgrave Macmillan, 2013.
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***Artphysics at work:  
A time-based cognitive mapping of  
Thomas Pynchon's conceptual  
organization of entropy***

Up to date the concept of time has been classified as an abstract (target) domain that needs the conceptual structural support of other (source) categories in order to be cognitively configured. This is so because time does not apparently have sufficient structure of its own and the lexicalizations related with the concept rely on its relationships with other notions like space or movement (Lakoff 1987; Evans 2004).

However, this may not be the case in other situations in which the experience of time is perceived differently (Sinha as in the case of any expert in Physics, and so the concept is represented in a way that seems unconventional for the lay observer. Time vocabulary properly speaking may seem limited; however, it is a fact that, for example, the discrete units for measuring time are also part of the temporal lexicon. By these we mean any lexical item connected with the segmentation of time (e.g. in terms of seasons, hours, months, divisions of the day...). Therefore, time is not only that vague concept which is difficult to conceive. In fact, the mechanical aspects of temporality associated with temporal discernment and measuring can give shape to other domains which are more abstract (for example, when we talk about lightyears, we express distance and not time although the word itself has a time-related lexeme).

The research presented here will involve a novel approach to the conceptual architecture of time as we examine unique construals of time modelled cognitively through image schema, metaphor and/or metonymy as artfully produced by a mind that masters technical knowledge structures from Theoretical Physics like Thomas Pynchon's. Our hypothesis from this more dynamicist approach is that certain abstract concepts (or target domains, technically speaking) can be articulated through temporal frames of reference relating to time segmentation and duration (Núñez et al. 2013), that is to say, that the concept of time can be viewed as source domain elaborated further into new complex meaning trajectories (Guerra 2001).

This inversion of the conceptual system of temporal cognition whereby time is now the departure fuzzy frame (Guerra 2001, 2013) of conceptual projection endowing *entropy* with new meaning structure is a discovery that will be illustrated here with examples from Thomas Pynchon literary narratives "Entropy" and *The Crying of Lot 49*.

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***How Poets Explain the History of  
Astronomy: Dante's "Convivio" and  
Kepler's "Rudolphine Tables"***

"To master the science of Astrology, a very great span of time passes....," writes Dante Alighieri in his *Convivio* (ca. 1304), possibly with his mind on his own studies. The discovery of nature, as is generally accepted, started in the Middle Ages. In the middle of the 13<sup>th</sup> century, a secular stream of thought emerges within the clerical environment of the University of Paris which continues to run parallel with the official scholastic discourse. New translations of and commentaries on Aristotle's texts changed, not only the general, but also the Christian worldview. As poet-philosopher, Dante (1265-1320) finds himself at the beginning of this intellectual revolution, while Johannes Kepler (1571-1630), mathematician and astronomer, finds himself at the end. With his calculations for planetary motion and his discovery of the elliptical orbit (which is still considered to be valid today), Kepler made a definitive break with Medieval *celestial theology*, substituting it with a modern *celestial physics*.

What is the connection between Dante and Kepler?

They are both humanists, they understand themselves

as poet *and* scientist, they think historically, and they have a distinctive educational agenda: to reach readers who are far removed from the specialized scientific audiences. Dante composes the *Convivio* (1304), a philosophical treatise for a courtly lay audience in which he scientifically repositions himself and discusses the Aristotelian-Ptolemaic sphere model in the vernacular. Kepler presents a literary testament with his *Somnium* (1609/1634) and prefaces most of his scientific works with long poems in which he discusses his vision for a Keplerian-Copernican astronomy. Both Dante and Kepler are deeply devout Christians who simultaneously foster "an almost divine love of knowledge." It is a humanistic love for *another antiquity*, for forgotten texts and theories of Greek philosophy and astronomy.

In the *Convivio*, Dante describes the cosmos as an analogous system of ten hierarchical stages in which number, universe, science, and education are ordered in relation to one another. To every number, a sphere of heaven, a scholarly discipline (Artes Liberales), and an ontological condition of knowledge is allotted. Dante—more metaphysicist than physicist—is familiar with the knowledge discourses of his time, he introduces positions, considers arguments, mentions the names of scientists. Experience and reason are necessary in order to find evidence and to judge properly.

With the unique charge to complete Tycho Brahe's *Rudolphine Tables*, Kepler seizes the opportunity from 1601 onwards to furtively advance his own orbital calculations with Brahe's data. The tables are only printed in 1627. Kepler, who until then has remained unnoticed as an artist, prefaces the opulent numerical work with an etching which represents an allegorical *Temple of Astronomy*, and the *Idyllion*, a didactic poem in Latin, in which he explains in detail how the temple should be understood. The image and text depict an applied history of astronomy in which various worldviews are *dialogically* highlighted: Chaldean, Babylonian, and Greek stargazers, Copernicus and Brahe and their respective measuring instruments. They also, however, depict Kepler himself: as a thinker in his study

and in the printer's workshop. The viewer sees the astronomer in discussion with role models, distinguished from Tycho Brahe, and—mythologically disguised—as an outstanding innovator who leaves behind false worldviews.

**Publications:**

- *Diener – Herr – Herrschaft? Hierarchien in Mittelalter und Renaissance.* Heidelberg: Winter Verlag, 2009. (Ed. with Brigitte Burrichter)
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***On "Atomic Fragmentation" and  
"Planetary Motion": Nuclear Physics  
in the Literary Context of Early  
Modern Astronomy***

The point of departure for this presentation is the question of whether the discovery of atomic fragmentation, with its technological, social, and moral implications can be adequately represented by the historical case of Galileo, which has been dramatically portrayed by Bertolt Brecht in three versions since 1938 and as a novel by Gertrud von Le Fort in 1954. Galileo Galilei namely achieved a political effect with his fundamental evidence on planetary motion as this is what unsettled the theological assumption of an axiomatic order in heaven and on earth. As a practitioner of physics who mapped out helpful star charts for sailors, on the other hand, Galileo was ideologically unobjectionable and for the church authorities harmless.

While Brecht uses the means of the (epic) theater, such as "historicization," to convincingly demonstrate the sociohistorical mediatedness of physical research by way of the case of Galileo, the problematics of its technological side—i.e. its technical-social application and the resulting responsibility of modern natural scientists which becomes a topic for public debate in the course of the 20th century—largely evade him. It is not until F. Dürrenmatt (1962), Christa Wolf (1987), and

Michael Frayn (1998) that these problematics are taken up—each time in different, but genuinely literary ways—and deduced from the ambivalent character or the discursive vagueness of nuclear energy.

**Publications:**

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**Changing Views on the Evidence:  
Galileo’s Dialogues as Genre Model  
for the 20th Century (Einstein, Brecht,  
Döblin)**

When the physicist and later Secretary-General of the Labour and Socialist International, Friedrich Adler, was prosecuted for the murder of the Austrian Minister-President Stürgkh in 1917 in Vienna, he saw himself as Galileo facing the Roman Inquisition. Georgi Dimitrow, the later Secretary-General of the Comintern, invoked this same scene in front of the National-Socialist Reichstag Fire Tribunal (the Leipzig Trial) in 1933 and was lead away with the concluding words, “and yet it moves.”

In condensed form, this dialogue sequence signals a knowledge-based triumph which is momentarily hindered by the asymmetrical speech situation, but which on the long term is ensured by the manufactured public sphere. In this manner, Adler and Dimitrow trusted—in anticipation of, or rather with recourse to a democratic public sphere—“the gentle force of reason,” as Brecht’s Galileo phrased it later.

“Eppur si muove” thus became an abbreviation of a process which basically determines the core of the *Dialogue Concerning the Two Chief World Systems*. Gumbrecht sees the genre as fundamentally situated “between the problematization of established knowledge and the conceptualization of basic categories for new knowledges.” Aside from the exemplary confrontation of paradigms, the dialogue—in the tradition of Galileo—is additionally able to establish the public sphere. It tends to promise a generally understandable text that builds on audience activation and draws conclusions from its argumentative propositions. In the 20th century, the genre experienced a revival as part of a renaissance in its customary discipline, physics. Albert Einstein, who knew Adler from Zurich, drew on it in his 1918 *Dialogue on Objections to the Theory of Relativity*. After his *Relativity: The Special and the General Theory*, Einstein, who after the Second World War wrote a perceptive foreword to Galileo’s *Dialogue*, found in the genre, not only a way to popularize, but to produce as text effects “the purely fictitious character of the basic principles of theory” (*On the Method of Theoretical Physics*), meaning alternative perspectives gained through thought experiments which are to be tested in the empirical world.

Bertolt Brecht, fascinated by Dimitrow’s speech in court, found himself in a similar situation in the 1930s. Convinced of the validity of Marxist theory, he had to conclude that its fundamental premises—unlike heliocentrism which has just as little visible correspondence with things—did not become a determining factor for the viewpoint of the working class. These sketched out genre characteristics prompted Brecht to model his theoretical text, *The Messingkauf Dialogues* (1939), after Galileo’s *Dialogue*. But also one Einstein dialogue, *Flüchtlingsgespräche* (1940/41) (i.e. *Refugee Conversations*), and, of course, the *Life of Galileo* (1939) are influenced by this form of scholastic dialogue so characteristic for physics. Brecht looked to Galileo and not to Plato or the French Enlightenment, because the laws of physics as well as sociology appeared to him as relevant categories of self-understanding for a modern society. Categories which can marshal a “theater for a

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scientific age” and affirm it in a perspective-altering way.

Whereas Brecht used the historical situation of upheaval for utopian projects, Alfred Döblin took the new world order as an opportunity to draw a dystopian line underneath the developments. Döblin, who in 1923 already condemned Einstein's book on relativity, ended his extensive narrative of modern history, *Amazon* (1937/38), with a final judgment instead of a world revolution. He reverses the situation of the dialogue and places Galileo, together with Copernicus and Bruno, once again before an ecclesiastical court. The implicated misdevelopments break in analogous ways with societal conventions and are symptomatic of religious efforts for renewal at the middle of the century—his work thus finds a consistent continuation after 1945 in the genre reactivation of the religious dialogue (*Der unsterbliche Mensch* [The Immortal Man]; *Der Kampf mit dem Engel* [The Struggle With the Angel]).

**Publications:**

- *Klangräume bei Peter Handke: Versuch einer polyperspektivischen Motivforschung*. Vienna: Braumüller, 2012. (Part of the book series: Zur neueren Literatur Österreichs, 25).
- “Katholische Physik? Weibliche naturwissenschaftliche Intelligenz in den Werken von Elisabeth Langgässer, Gertrud von le Fort und Gertrud Fussenegger.” (Forthcoming)
- “Wirkliche Wunder: Anna Maria Jokls naturwissenschaftlich inspiriertes Aufklärungsprojekt.”  
*“Hieroglyphe der Epoche?”: Zum Werk der österreichisch-jüdischen Autorin Anna Maria Jokl (1911-2001)*. Ed. Susanne Blumesberger, et al. Vienna: Praesens, 2014. 215-240.

## **September 10, 2001 or Attractors in the Interpretation of Contemporary Literature**

The mathematical concept of attractors, which finds application in physics i.a., can be used to represent processes of perception and interpretation in contemporary literature, and especially contemporary theater. With these attractors, it is namely possible to model various possible interpretations, their temporal conditions, as well as their mutual influence. Especially the disruption of attractors gains significance for contemporary literature. A lot of texts stand out because of the way they undercut clear interpretations without, however, making interpretation arbitrary; they rather offer only occasionally stable interpretation possibilities. Such texts can, for instance, raise ethical questions in such a way that takes into account the coping with a present without “metanarratives” (Lyotard). These theoretical thoughts will be illustrated with contemporary theater productions (Rodrigo García, *Compré una pala en Ikea para cavar mi tumba* [I bought a shovel at Ikea to dig my grave]) as well as with representations from the contemporary novel (Roberto Bolaño, *Los detectives salvajes* [The Wild Detectives]).

### **PROF. DR. SUSANNE HARTWIG**

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*Susanne Hartwig's research interests are the relations between literature and theories of cognition and communication; systems theory and cybernetics in literary studies; mathematics and literature; theater of the 20th and 21st centuries (France and Spain); the Latin-American novel of the 20th and 21st centuries; the psychology of emotions and literary studies.*

### **Publications:**

- “Literatur, Realität, Mathematik – gibt es ein Verhältnis zueinander?” *Interpretatio mundi: Wie deuten Wissenschaften ihre Welt?* Eds. Thomas Groh and Jörn Lorenz. Dresden: w.e.b., 2010. 47-62. (with Stefan Siegmund)
- “Stimmigkeit und Ambivalenz: Vorteile eines Attraktorkonzeptes bei der Beschreibung literarischer Texte.” *Chaosforschung in der Literaturwissenschaft*. Eds. Roman Mikuláš and Karin S. Wozonig. Wien/Berlin: Lit 2009. 67-80.
- “De-coherencia y universos múltiples en el teatro español contemporáneo.” (Forthcoming in the proceedings of the international colloquium “El teatro cuántico,” Toulouse, expected in 2014)



Programme for Sunday, June 1, 2014

	<b>Sektion I</b>	
	<i>Moderation: Rudolf Freiburg</i>	at Wassersaal der Orangerie
09.00	<b>Kieran Murphy</b> Dept. of French and Italian, U. Colorado at Boulder	<i>The Art and Science of the Electromagnetic Age</i>
–	<b>Leonardo Colletti</b> Department of Physics, Trento	<i>Meeting Husserl's Crisis of the Europ. Science: developing a richer science – and richer humanity – from cross-fertilization of physics with literature</i>
11.00	<b>Gwen Le Cor</b> Dépt. d'Études des Pays Anglophones, Paris 8	<i>A poetics of catastrophe theory?: (Un)-reading Stephanie Strickland's "costal chreods"</i>
	<b>Sektion II</b>	
	<i>Moderation: Manuel Illi</i>	at Musiksaal der Orangerie
09.00	<b>Lukas Mairhofer</b> Fakultät für Physik, Universität Wien	<i>Als Brecht in Heisenbergs Mikroskop blickte</i>
–	<b>Angela Gencarelli</b> Institut für Germanistik, Universität Bonn	<i>Teilchenphysik und Poetik in Irmtraud Morgners Novelle „Das Seil“</i>
11.00	<b>Betül Dilmac</b> Romanisches Seminar, Universität Freiburg	<i>„Le chat de Schrödinger“ von Philippe Forest. „Il était deux fois“: Experimentelle Schreibordnungen im Zeichen der Trauer</i>
11.40	<b>coffee break</b>	
		at Wassersaal der Orangerie
11.30	<b>Matinee: Lesung Ulrike Draesner</b> Berlin	<i>Aus dem Roman: „Sieben Sprünge vom Rand der Welt“</i>
13.00		
13.00	<b>Klaus Mecke / Christine Lubkoll / Aura Heydenreich / Antje Kley</b> Departments Physik / Germanistik, FAU Erlangen	<i>ELINAS Ausblick/Abschlussdiskussion</i>
13.30		

see abstracts on the following pages

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*Kieran Murphy, who works as an Assistant Professor of French at the University of Colorado, Boulder, studied Engineering and Fine Arts at the University of Minnesota. For his doctorate degree in Comparative Literature at the University of California, Santa Barbara, he specialized in French Literature and Philosophy, Haitian Culture and the interactions between literature and science, with the latter being one of his main interests as can be seen in his first book "The Art and Science of the Electromagnetic Age" and his article "Electromagnetic Thought in Balzac, Villiers de l'Isle-Adam and Joseph Breuer," which was awarded with the Schachterle Essay Prize by the Society for Literature, Science and the Arts.*

***The Art and Science of the  
Electromagnetic Age***

In this paper, I will present some of the research I have done for my book manuscript, *The Art and Science of the Electromagnetic Age*. Electromagnetism led to the emergence of a new physical model that, through new concepts such as André-Marie Ampère's Electrodynamics, Michael Faraday's and James Clerk Maxwell's "field theory," and Albert Einstein's theory of Relativity, undermined the soundness of Newtonian physics and, by extension, the bourgeois mechanist worldview. Electromagnetism was originally born from experiences that surprised most scientists by proving that two different forces of nature, electricity and magnetism, were interrelated, and that this interrelation generated a steady movement. Electromagnetism thus manifested a new type of difference and relation, which, I argue in the wake of Michel Serres' interdisciplinary work on thermodynamics, became a motor for scientific and literary invention. Unlike thermodynamics, electromagnetism remains underexplored in interdisciplinary studies. My book manuscript contributes to this emerging field by tracing the cultural interactions surrounding the discovery of electromagnetism in the 1820s and its evolution through the early twentieth century.

My paper will focus on the discovery of electromagnetic induction and how it sparked related literary and scientific experimentations that contributed to the reconceptualization of critical notions such as life, will, power, space, time, and history. Through examples from works by Balzac, Poe, Einstein, and Bachelard, I will show the profound cultural and scientific impact of electromagnetism on modern thought, particularly as an alternative model to Newtonian mechanism and atomism.

**Publications:**

- *The Art and Science of the Electromagnetic Age* (under consideration at the University of Minnesota Press, request for revisions, which are in progress)
- "Franklin, Mesmer, and the Haitian Roots of Modernity." Accepted for publication in *America and the Haitian Revolution: Essays on the Cultural History of Atlantic Colonialism and Modernity*. (Ed. Elizabeth Maddock Dillon and Michael J. Drexler). Philadelphia: University of Pennsylvania Press, 2014.
- "'I am Dead:' Magnetism, Poe, Barthes, and Derrida." Accepted for publication in *POEtiques/Poetics, l'influence d'Edgar Allan Poe sur les théories et les pratiques des genres dans le domaine français du 19ème au 21ème siècle*. Paris: Éditions Hermann, 2014.
- "Electromagnetic Thought in Balzac, Villiers de l'Isle-Adam and Joseph Breuer." *SubStance* 40.2 (2011): 127-147. (Awarded the Schachterle Essay Prize by The Society for Literature, Science, and the Arts)
- "Le Magnétisme, la grande chaîne des êtres et l'animal électromagnétique." *Épistémocritique: revue de la littérature et des savoirs*. 7 (2011).
- "White Zombie." *Contemporary French and Francophone Studies/Sites*. 15.1 (2011): 47-55. (Special issue on North America & the Caribbean, Ed. Alec Hargreaves and Martin Munro).
- "Catastrophe Preparedness: 'Eight Years Later.'" *artUS*. 26 (2008): 8-13.
- "Magic and Mesmerism in Saint Domingue." *Paroles Gelées: UCLA French Studies* 24 (2008): 31-48.

**Meeting Husserl's Crisis of the European Science: developing a richer science – and richer humanity – from cross-fertilization of physics with literature**

In the media physics is commonly depicted as a powerful but arid technique capable of providing new tools for our concrete life. At the same time all the humanities, though based each as well on sets of fully developed technical elements, are unanimously considered the unparalleled core of human culture. Also notable scientists, like Erwin Schrödinger, regretfully admitted how physics, in order to be what it is, needs to give up on the problems which primarily concern the human being, thus coming into second place with respect to the humanities. A less drastic separation is implicit in the phenomenological approach to knowledge proposed by Edmund Husserl, who expressed an harsh critique of those sciences, like the galilean one, which seem to have forgotten the basic fact that any science's concept is, in ultimate analysis, firmly bond to a general way of the human to approach the world: by isolating the external events from a continuous analysis of our way to address them, physics became a deceptive, poor "science of mere facts". Thus, following Husserl, we ought to remember that when we speak about the world, we speak about ourselves as well: when we use words like *density*, *interaction*, *approximation*, *field*... we are dealing with forms which have a range that might reach beyond that of physics. For example, physics' concepts are used - perhaps not fully knowingly - by copyreaders: a writing could be *cold* and *dense*, but after changing the structure of the narrative, e.g. emphasizing the dialogues etc., it could become *hotter* and *fluent*. Should we distrust them from using such terms, or should we take advantage of this complementary use and get the opportunity of adding new facets to old concepts? In physics there is plenty of universal forms that might prompt writers toward new nuances and which could come back eventually to physics to elicit new perspectives. For example, what do we mean with many-body problem? How would we arrange a novel in order to deliver such condition? This also suggest a new perspective in physics education and popularization. In the talk I will propose some parallels and interactions between literature and physics through the works by Dante, de Cervantes, Calvino, Lucretius, Dostoyevsky, Emily Brontë, Mary Shelley, Robert Frost.

**Publications:**

- *Quadri di un'esposizione. Le grandi idee della fisica attraverso 32 capolavori della pittura* (transl: *Picture at an Exhibition. The great concepts of physics through 32 masterpieces*), Lindau, Torino, 2011 (272 pag.)

**LEONARDO COLLETTI**

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*Gwen Le Cor is an associate Professor of American Literature and English for Specific Purposes at the Université de Paris 8, Vincennes-Saint-Denis. She is a member of the Board of Trustees and of the International Relations Committee. Additionally, she is an associate of the Équipe d'Accueil 1569: Transferts critiques et dynamique des savoirs Littérature et Cognition. Textes contemporains et textualités numériques.*

***A poetics of catastrophe theory? :  
(Un)-reading Stephanie Strickland's  
"costal chreods"***

Using Stephanie Strickland's *slippingglimpse* as my tutor text, I want to show how mathematical concepts and physical theory can help us read or un-read a literary text. *slippingglimpse* is an electronic literature work created in collaboration with a videographer and a programmer, which presents a hybrid made of water images, text and coding. In full-screen mode, the reader encounters words "treading a wave", "sequences" of letters floating over videos of moving water. Water and text thus seem to be interchangeable, creating a new liquid texture. Text appears first in liquid form, and not simply from a metaphorical perspective—strings of words and individual words are coded to be embedded in water. What is more, the authors describe the videos as "costal chreods" and contend that they create text in a *dynamical system*: "the image-capture video reads the water, reading for and enhancing water flow patterns (chreods) to which dynamical systems return even as they continuously change" (*slippingglimpse* introduction). Their use of "coastal chreods" refers to the term "chreods" coined by biologist C.H. Waddington and later taken up and expanded to mathematics and catastrophe theory by René Thom.

The aim of this paper is thus to un-read and re-read Stephanie Strickland's liquid text in the light of the author's reference to Thom's catastrophe theory. To what extent is it a useful theoretical tool to read the poetic work?

I am interested in the *bifurcations* the "regenerate" button and the scroll-text mode propose. In scroll-text mode one can choose to read a solid text in reverse. I also intend to focus on the texture of the liquid text, to examine how the change of phase from solid to liquid and the loss of stability it entails impact both the text and the way we read the work.

In "Dovetailing Details Fly Apart—All Over, Again, in Code, in Poetry, in Chreods" Stephanie Strickland and Cynthia Lawson Jaramillo, contend that "Poetry and code—and mathematics—make us read differently from other forms of writing." Stephanie Strickland's *slippingglimpse*, makes us read differently, or perhaps makes our reading *differ* (the term is Derrida's). It is ultimately this spacing of poetry through science that I would like to examine.

**Publications:**

- «The Critical Voice and the Narrative Voice: Robert Penn Warren's Essay on Coleridge and *All the King's Men*.» *Mississippi Quarterly: the Journal of Southern Culture*.63.1, (Winter 2010). Mississippi State: Mississippi State University, 119-133.
- «Les mathématiques à l'épreuve de la fiction: valse et disjonction» *Textes et Contextes*. 2013 [En ligne]. Forthcoming.
- «Les mathématiques mises en scène», *ILCEA*, 12 | 2010, [En ligne], mis en ligne le 23 septembre 2010. URL: <http://ilcea.revues.org/index883.htm>
- «Primary Colors, entre fiction et documentaire» In Michel Petit (Dir.) *Aspects de la fiction à substrat professionnel*. Collection Travaux 20.25. Bordeaux Imprimerie de l'Université Victor-Segalen Bordeaux 2, 2004. 81-93.

## **When Brecht Looked Into Heisenberg's Microscope**

A surprisingly explicit strand of references to quantum mechanics can be found throughout Bertolt Brecht's work that until now has been completely ignored. Brecht metaphorizes Heisenberg's crucial thought experiment of the gamma-ray microscope with which the physicist developed the uncertainty principle: the act of measurement itself influences the observed process which can thus not be described independently from its observation. Brecht substantiates with the influence of the observation on the process far-reaching aesthetic and ethical premises. He criticizes bourgeois social theory's assumption of abstract, unconditioned individuals, but at the same time he also criticizes Marxism's assumption of abstract principles in which subjects play no part. Brecht's affinity with quantum mechanics becomes more plausible when considering the collective social, cultural, and historical context: both are products of the Weimar Republic and just as Brecht most quantum physicists were forced to flee National Socialism. During his Danish exile, Brecht meets the physicist Niels Bohr, who he wanted to consult while writing his play, *Life of Galileo*. In his US-American exile, Brecht maintains an intense discussion with the physicist and philosopher Hans Reichenbach about the problem of causality in quantum mechanics, in which Adorno and Horkheimer also got involved. Through these discussions, the figure of the gambler emerges as collective idea. Brecht uses it to describe a behavioral theory he develops as a fugitive in order to orientate himself in social processes in which individual cases are largely contingent on the general laws. The individual person can only bet on the results of his own actions. Reichenbach uses the gambler as a metaphor for the physicists in the age of quantum mechanics: their prognoses are only a "best bet" on the outcome of their experiments. Following this discussion, Brecht started working on his last significant drama, *The Caucasian Chalk Circle*. Using the figure of the gambler, this play can be read against quantum mechanics: it contains fifteen scenes in five acts, the main characters generally act as gamblers and the dramatic development itself points towards a contingent causal structure. It should be stressed that the transfer of knowledge between Brecht's theater and quantum mechanics occurs in both directions and builds on a collective archive of concepts and methods, which can be shown through the examples of the collective, the statistic, and the field.

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*Lukas Mairhofer's research interests are the interaction between literature and physics in the 20th century. He completed a degree in physics and philosophy and is currently finishing his dissertation in philosophy on "Bertolt Brecht's 'Interference' With Quantum Physics." He is also working on a dissertation in physics on "New Sources for Matterwave Interferometry with large neutral Biomolecules"*

### **Publications:**

- "Atom und Individuum: Bertolt Brechts Konfrontation mit der Quantenmechanik." *Bild und Bildkünste bei Brecht*. Ed. Christian Hippe. Berlin: Matthes & Seitz, 2010.
- "'Die Spieler die wir sind': Zu einer Denkfigur der Quantenmechanik in Brechts Kaukasischem Kreidekreis." *Brecht-Jahrbuch, 2013*. Ed. Theodore Rippey. (In print.)
- "Mit der Feuerzange." *Beobachtung*. Eds. Helmut Lethen, Annegret Pelz. (Forthcoming)

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*Angela Gencarelli studied German, History, and Sociology at the University of Potsdam from 2002 till 2008. Between 2008 and 2010 she was employed in the private sector. Since 2010 she holds a scholarship at the German-Italian doctoral program at the University of Bonn with a dissertation project on particle physics in Irmtraud Morgner's prose. In 2012-2013 she worked as an academic assistant in Modern German Literature at the Johann Wolfgang Goethe University of Frankfurt. Since 2014 she holds a PhD completion scholarship from the FAZIT foundation. Her research interests are literature and modern physics, science studies, especially the rhetoric of the sciences, German literature from 1945 till 1989.*

***Particle Physics and Poetics in  
Irmtraud Morgner's Novelle "Das Seil"  
("The Rope")***

The point of departure of this presentation is a textual practice which is constitutive for the novels and stories of Irmtraud Morgner (1933-1990), an author who has been all but forgotten today. She assembles set pieces from (specialized) texts on particle physics and places them *pagewise* into her fictional narratives. These pieces of text originate predominantly from the former *Institut für die Physik hoher Energien* (the Institute for High Energy Physics) in Zeuthen (known today as DESY), in which Morgner had herself employed as a laboratory assistant in the 1960s in order to write prose texts about modern physics. A pretext that is taken up in several of her novels and stories is the research report of this institute, in which the experimental procedures concerning the production, representation, and reconstruction of invisible particles is the central focus. The specific selection of individual passages from this report, as well as the various ways in which they are embedded into Morgner's prose, draw attention to the visualization of the unobservable, and consequently, to a *poetics of particle physics*. Through the example of the novella *Das Seil* (*The Rope*, 1973), this poetological approach to particle physics can be clarified in two respects. Firstly, the novella focuses on the poetic elements of particle physics, for example on the role of fiction and imagination for the visualization of subatomic particles. Secondly, the fictional-imaginary of particle physics is juxtaposed with the fictional-imaginary of fantastic literature, by which particle physics is approximated with the fantastic. From this interplay between fantastic particle physics and fantastic literature,

the novella constructs its specific poetics. In this way, the presentation elucidates, through the example of Morgner's prose, a hitherto neglected aspect of the research on the interrelations between literature and modern physics.

**»Le chat de Schrödinger« by Philippe Forest. »Il était deux fois«:  
*Experimental Narrative Compositions  
Characterized by Grief***

Philippe Forest, professor of literature at the University of Nantes, counts (at least in Germany) among the less known contemporary French authors. The death of his daughter prompted the start of his literary career. The literary texts he has published so far draw on this singularly important experience and are, as such, strongly autobiographically inspired. His double qualification as novelist and literary scholar also characterize his work: just as his scholarly/essayistic texts (which he describes as “fictions critiques”) have a literary dimension, his literary texts, too, show clear traces of his theoretical reflections on literature and the novel.

Forest's latest novel, *Le chat de Schrödinger*, is also marked by a pronounced self-reflexive strain: in this novel, Erwin Schrödinger's well-known thought experiment becomes the pivotal element of a narrative in which, on the one hand, topics such as life, death, and grief are addressed and, on the other hand, questions are raised regarding the possibility of their representability. The resulting experimental compositions will be the focus of my contribution.

**Publications:**

- Literatur und moderne Physik. Literarisierungen der Physik im französischen, italienischen und lateinamerikanischen Gegenwartsroman, Freiburg i.Br.: Rombach 2012.
- »Schreiben an der Grenze zwischen Potentialität und Aktualität. Zur produktiven Auseinandersetzung mit quantenphysikalischen Wahrscheinlichkeitsbegriffen in der postavantgardistischen Erzählliteratur Frankreichs«, in: Sandra Fluhrer et al. (Hg.), *Alles Mögliche. Sprechen, Schreiben und Denken des (Un)Möglichen*, Würzburg: Königshausen & Neumann 2014. [in press]
- »Les relations entre la physique moderne et le roman contemporain«, in: *Épistémocritique* 14 (2014). [in press]

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*Dr. Betül Dilmac studied German and Romance Studies at the Ruprecht-Karls-University Heidelberg, at the Université de Paris-Sorbonne (Paris IV) and at the University Mannheim. After her graduation with honours in 2007, with her master's thesis dealing with the relationship between literary and scientific discourses in Michel Houellebecq, she worked as a teaching assistant at the Romance Study Department of the University Mannheim. In 2011, she obtained a doctoral degree in Romance Philology at the Albert-Ludwigs-Universität Freiburg.*

## ULRIKE DRAESNER



Berlin

*Ulrike Draesner, geboren 1962 in München, lebt als Romanautorin, Lyrikerin und Essayistin in Berlin. Draesner studierte Anglistik, Germanistik und Philosophie, sie promovierte 1992.*

*Für ihr Werk erhielt sie zahlreiche Auszeichnungen, zuletzt den Solothurner Literaturpreis (2010), den Roswitha-Preis 2013 und den Joachim-Ringel-natz-Preis (2014).*

*Ulrike Draesner was born in Munich in 1962 and lives in Berlin as a novelist, poet and essayist. She studied English, German and Philosophy and made her Ph.D. in 1992. Her works received several awards, among them the Solothurner Literaturpreis (2010), Roswitha-Preis (2013) and the Joachim Ringelnatz-Preis (2014).*

## „Sieben Sprünge vom Rand der Welt“

Ulrike Draesner kreuzt die Lebenswege der schlesischen Familie Grolmann mit dem Schicksal einer aus Ostpolen nach Wroclaw vertriebenen Familie. Vier Generationen kommen zu Wort. Virtuoso entwirft der Roman ein Kaleidoskop der Erinnerungen, die sich zu immer neuen Bildern fügen. Sie zeigen, wie durch Zwangsmigration zugefügte Traumata sich auswirken, wie seelische Landschaften sich von einer Generation in die nächste weiterstempeln. Die Geschichten der Grolmanns und der Nienaltowskis werden zum Spiegel von hundert Jahren mitteleuropäischer Geschichte.

Ulrike Draesner connects the path of Silesian family Grolmann with the fate of a family expelled from Eastern Poland. Four generations get a chance to speak. The novel presents a kaleidoscope of memories that continually creates new perspectives. They show the traumas inflicted by forced migration and how the mental landscapes of one generation transpire to the next. The stories of the two families become a mirror of a hundred years of European history.

### Publications:

- *Gedächtnisschleifen*, Gedichte, Frankfurt am Main 1995, überarbeitete Neuauflage München 2008
- *Anis-o-trop*, Gedichte, Hamburg 1997
- *Lichtpause*, Roman, München 1998
- *Mitgift*, Roman, München 2002
- *kugelblitz*, Gedichte, München 2005
- *Vorliebe*, Roman, Luchterhand, München 2010
- *Sieben Sprünge vom Rand der Welt*, Roman, Luchterhand, München 2014

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## Restaurant recommendations

...for lunch:

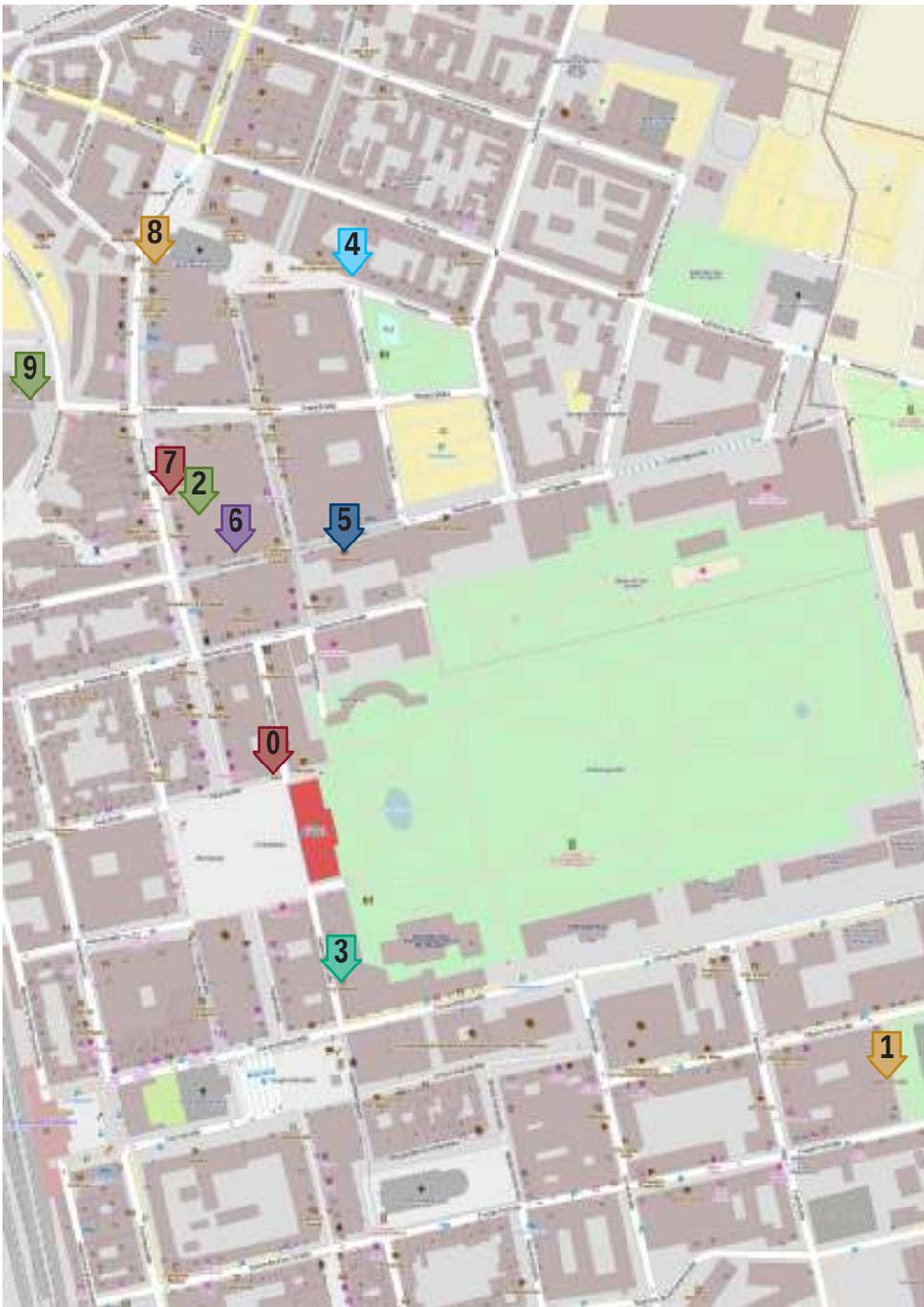
		<b>Sax</b> , Am Schlossplatz 6: Café/Bistro with good and inexpensive lunch options. International cuisine.
		<b>Alter Simpl</b> , Bohlenplatz 2: Traditional restaurant with a highly Franconian-rustic menu, be it the dishes or the assortment of beer. It stands out due to the various regional specialties.
		<b>Muskat</b> , Hauptstraße 60: This neat restaurant with its pleasant atmosphere is committed to serving organic food only, without being overpriced. They offer snacks and full meals. Suited for people on vegetarian or vegan diet.

...for dinner:

		<b>La Pasión</b> , Halbmondstraße 4: Student-oriented, Tex-Mex restaurant with a warm atmosphere. Known for its tapas, large burgers and cocktails.
		<b>Zen</b> , Theaterplatz 22: Neat and elegant Thai restaurant but not overpriced. Located in a colonial style building the first floor features a well-known and good cocktail bar.
<b>Theatercafé</b>		<b>Theatercafé</b> , Theaterstraße 5: Turkish / Mediterranean cuisine, franconian beer. The place for visiting actors and writers to celebrate following their performances.
		<b>Mireo</b> , Glockenstraße 4: Greek-Mediterranean bistro cuisine with a nice and warm atmosphere.

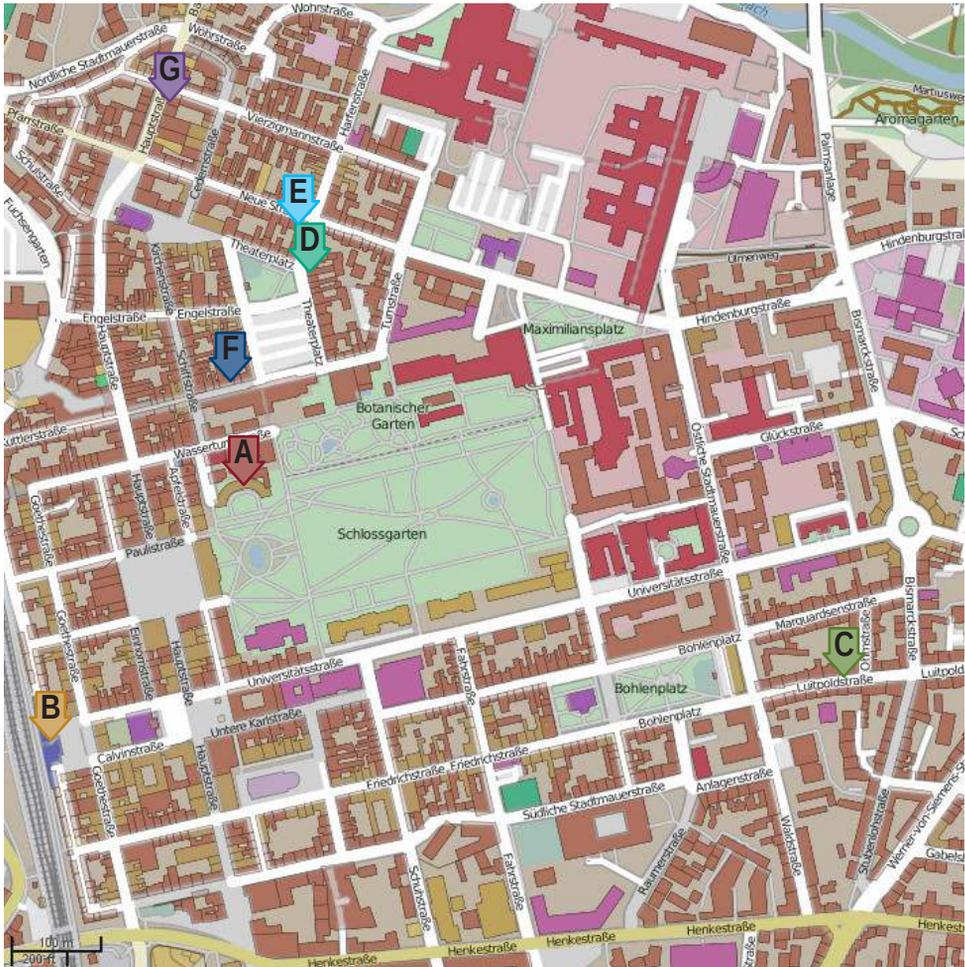
...for later in the evening:

		<b>Hinterhaus</b> , Hauptstraße 62: The front part of the bar is rather bistro-like whereas the back strikes as being very rustic. The Hinterhaus is known for the large variety of regional beers it offers.
		<b>Gummi-Wörner</b> , Hauptstraße 90: Urban, stylish, comic-affine (!) hipster-bar with a roofed court-yard, where smoking is still allowed.
		<b>E-Werk</b> , Fuchsenwiese 1: Oldest and biggest party location of the city center.



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## Find your way



source: openstreetbrowser.org, map data © OpenStreetMap contributors, CC BY-SA

**A** Orangerie  
Conference Center

**B** Erlangen Train  
Station

**C** Hotel  
Zeitwohnhaus

**D** Hotel  
Rokkokohaus

**E** AB Hotel

**F** Hotelchen am  
Theater

**G** Restaurant  
„Mein lieber Schwan“

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## Thursday, May 29

- 13.00 **Antje Kley**  
Welcome Speech
- **Klaus Mecke / Christine Lubkoll / Aura Heydenreich**
- 13.30 ELINAS  
Moderation: Antje Kley
- 13.30 **Arkady Plotnitsky**  
Really and Probability in Physics and Literature — From Laplace and Keist to Heisenberg and Musil
- **Dirk Vanderbeke**  
Physics of the Fantastic – Fantastic Physics
- Jörn Wilms**  
Science in Science Fiction – How Does an Astronomer Read Science Fiction?
- 16.00 coffee break
- 16.30 **Kirsten Shepherd-Barr**  
"Unmediated" Science Plays: Seeing What Sticks
- **Seth Clabough**
- 18.00 Quantum Physics, Physics Fiction, and All Things Awful
- 18.00 Reception (Orangerie)
- 20.00 **Durs Grünbein**  
Lesung aus: „Cyrano oder Die Rückkehr vom Mond“

## Friday, May 30

- Moderation: Lothar Ley
- 09.00 **Giovanni Vignale**  
The Beautiful Invisible. Creativity, Imagination and Theoretical Physics
- **Jay Labinger**  
The Role of Language in Conceptions of Atomic and Molecular Orbitals and Chemical Bonding Models
- Klaus Mecke**  
Quantitative Metaphors:  
How Physics Discovers Synonyms in Narrated Nature
- 11.15 coffee break
- Moderation: Dirk Vanderbeke
- 11.45 **Susan M. Gaines**  
Beyond Metaphor
- 12.30 Science as Subject in the Contemporary Literary Novel
- 14.00 **Winfried Thielmann**  
Physikalische Begriffsbildung aus Anglistischer Sicht
- **Nikola Kompa**  
Vom Nutzen und Nachteil metaphorischer Rede
- Lutz Kasper**  
Die Bedeutung von Subjektivierung und Ästhetisierung für den naturwissenschaftlichen Erkenntnisprozess
- 16.15 coffee break
- Guided tour Dürer's House
- Lesungen** Hausbrauerei Altstadt Hof, Nürnberg  
Moderation: Peter Hull
- 19.30 **Ignatius McGovern**  
The Making of "A Mystic Dream of 4"
- **Peter Maria Schuster**  
Wie kann man sich dem Schaffens-vorgang und der Erkenntnisfindung eines Physikers annähern?
- Johann Winkler**  
Performance zu Peter M. Schuster: „Schöpfungswoche – Tag eins, Christian Doppler zur Huldigung“
- 23.00 Return trip to Erlangen

## Saturday, May 31

- Moderation: Christine Lubkoll
- 09.00 **Maximilian Bergengruen**  
Physik der Metaphysik: Zur Technik der Geistererscheinungen in Gryphius', Catharina von Georgen' und „Carolus Stuardus“
- **Barbara Wiedemann**  
„In der Blaskammer“, Paul Celans physikalische „Anreicherung“
- Bernadette Malinowski**  
Literarische Epistemologie: Daniele DelGiudices „Allante occidentale“
- 11.15 coffee break
- Moderation: Dirk Vanderbeke
- 11.45 **Michael Gamper**  
Ästhetische Eigenzeten der Physik
- **Aura Heydenreich**  
Godels Zatschuelen und Bachs „Musikalisches Opfer“ als Modelle der Identitätskonstruktion in Richard Powers' „The Time of Our Singing“
- Sektion I  
Moderation: Angelika Lampert
- 14.30 **Sonja Front**  
Temporality in British Quantum Fiction – an Overview
- **Carlos Gámez Pérez**  
Postmodern Physics in Contemporary Spanish Literature: The case of Agustín Fernández Mallo
- 15.40 coffee break
- 16.10 **Nina Engelhardt**  
From Universal Force to Fictional Force – Gravity in Thomas Pynchon's „Gravity's Rainbow“
- **Marta Silvera, Juani Guerra & Adán Martín**  
Anthysics at work: A time-based cognitive mapping of Thomas Pynchon's conceptual organization of entropy
- 17.20 Sektion II  
Moderation: Harald Neumeyer
- 14.30 **Laetitia Rimpau**  
Wie Dichter Astronomiegeschichte erklären; Dantes „Convivio“ und Keplers „Rudolfinische Tafeln“
- **Rudolf Drux**  
Von der „Atomzertrümmerung“ und den „Bewegungen der Himmelskörper“: Die Kernphysik im literarischen Spiegel frühneuzeitlicher Astronomie
- 15.40 coffee break
- 16.10 **Clemens Özelt**  
Die Evidenz im Blickwechsel: Galileis Dialoge als Gattungsmodell im 20. Jahrhundert
- Susanne Hartwig**  
Der 10. September 2001 oder Attraktoren in der Interpretation von Gegenwartsliteratur
- Klaus Mecke / Christine Lubkoll / Aura Heydenreich**  
Physics and Literature – Discussion on future projects
- 18.30 Conference Dinner at „Mein lieber Schwan“

## Sunday, June 1

- Sektion I  
Moderation: Rudolf Freiburg
- 09.00 **Kieran Murphy**  
The Art and Science of the Electromagnetic Age
- **Leonardo Colletti**  
Meeting Husserl's Crisis of the Europ. Science: developing a richer science – and richer humanity – from cross-fertilization of physics with literature
- Gwen Le Cor**  
A poetics of catastrophe theory?: (Un-)reading Stephanie Strickland's "costal chreods"
- 11.00 Sektion II  
Moderation: Manuel III
- 09.00 **Lukas Mairhofer**  
Als Brecht in Heisenbergs Mikroskop blickte
- **Angela Gencarelli**  
Teilchenphysik und Poetik in Imtraud Morgner's Novelle „Das Sel“
- Betil Dilmac**  
„Le chat de Schrödinger“ von Philippe Forest: „Il était deux fois“: Experimentelle Schreibarrangements im Zeichen der Trauer
- 11.40 coffee break
- 11.30 **Matinee: Lesung Ulrike Draesner**  
– Aus dem Roman: „Sieben Sprünge vom Rand der Welt“
- 13.00 **Klaus Mecke / Christine Lubkoll / Aura Heydenreich / Antje Kley**  
ELINAS  
Ausblick/Abchlussdiskussion