

Conference
Models and Simulations 2



Tilburg, 11.10.2007 - 13.10.2007

Synopsis

Computer simulations play an important role in many scientific contexts, and they are often based on a particular model of the phenomenon under investigation. This raises questions both about the nature and methodology of simulations themselves, as well as their relations to models. These issues have recently attracted some attention, and were also discussed at the Models and Simulations conference in Paris in June 2006. The aim of the present conference is both to provide a forum to continue ongoing debates and to try to slightly shift the focus of attention. So far case studies played an important role in the debates over models and simulations and a lot has been learned from them. We are now also interested in theoretical approaches that attempt to rationalize these cases and help furthering our philosophical understanding of how models and simulations explain, how they are confirmed, how they relate to theories and other models, and how they represent.

Organizers: Roman Frigg (LSE), Stephan Hartmann (TiLPS) and Cyrille Imbert (IHPST)

Keynote Speakers

Ronald N. Giere (University of Minnesota), Margaret Morrison (University of Toronto), Stathis Psillos (University of Athens), Paul Teller (University of California)

Program

Thursday 11.10

09:00 - 09:30	<i>Registration</i>	
09:30 - 09:45	<i>Welcome and introduction</i>	
Plenary session 1	Room WZ101	
Chair: Stephan Hartmann		
09:45 - 11:00	Margaret Morrison: <i>“Too Many Models - Not Enough Theories: Reconfiguring the ‘Theoretical’ Landscape”</i>	
	<i>Coffee</i>	
11:00 - 11:30	Room WZ101	Room WZ204
Parallel session 1	Chair: Roman Frigg	Chair: James McAllister
11:30 - 12:15	Anjan CHAKRAVARTTY: <i>“What Makes a Model a Scientific Representation?”</i>	Timo HONKELA: <i>“Neural Networks as Cross-Disciplinary Computational Templates: the Philosophical Implications of the Dissemination of Self-Organizing Maps”</i>
12:15 - 01:00	Andrew WAYNE: <i>“Explanatory Relations Between Models”</i>	GRAMELSBERGER and Werner KOGGE: <i>“Loops Between Methods: Simulation and Experimentation”</i>
01:00 - 02:00	<i>Lunch</i>	
Parallel session 2	Room WZ101	Room WZ204
	Chair: Paul Humphreys	Chair: Robert Batterman
02:00 - 02:45	Wendy PARKER: <i>“Hierarchies and Ensembles: Collections of Incompatible Models for Understanding and Prediction”</i>	Rafaela HILLERBRAND: <i>“Scale Separation as a Condition for Quantitative Modelling. Why Mathematics Works for some Problems and Fails for Others”</i>
02:45 - 03:30	Leonard SMITH: <i>“Probabilistic, but Probably Not Probabilities: Simulation Models in Climate and Weather Forecasting”</i>	Michael SEEVINCK: <i>“On the Merits of Modeling Quantum Mechanics Using Semi-Classical Models”</i>
03:30 - 04:00	<i>Coffee</i>	

Parallel session 3	Room WZ101	Room WZ204
04:00 - 04:45	Chair: Anjan Chakravartty Rawad EL SKAF and Cyrille IMBERT: <i>“Computer Simu- lations and Thought Experi- ments: How Close?”</i>	Chair: Paul Teller Michael WEISBERG: <i>“Trade- offs and Idealization in Scien- tific Modeling”</i>
Plenary session 2	Room WZ101	
Chair: Cyrille Imbert		
04:45 - 06:00	Ronald Giere: <i>“An Agent- Based Account of Models and Simulations”</i>	
07:30	Conference dinner	

Friday 12.10

Parallel session 4	Room CZ9	Room C186
09:30 - 10:15	Chair: Michael Weisberg Marco FAHMI: <i>“The Ontolog- ical Commitments of Mathe- matical Models”</i>	Chair: Cyrille Imbert Christopher PINCOCK: <i>“Modeling Reality”</i>
10:15 - 11:00	Marion VORMS: <i>“Models and Formats of Representation: Representational and Compu- tational Aspects”</i>	Demetris PORTIDES: <i>“An Explication of the Processes of Idealization and Abstrac- tion in Scientific Model Con- struction”</i>
11:00 - 11:30	Coffee	
Parallel session 5	Room CZ9	Room C186
11:30 - 12:15	Chair: Uskali Mäki James McALLISTER: <i>“Thought Experiments as Simulations: Epistemology and Methodology”</i>	Chair: Ronald Giere Steve RUSS: <i>“Computing with Experience”</i>
12:15 - 01:00	Julian REISS: <i>“Models, Thought Experiments, Simu- lations: Travelling the Space Between Internal and External Validity”</i>	Till GRUENE-YANOFF: <i>“Agent-Based Models As Policy Decision Tools”</i>
01:00 - 02:00	Lunch	

Parallel session 6	Room CZ9	C186
02:00 - 02:45	Chair: Kevin Hoover Giuseppe BOCCIGNONE and Roberto CORDESCHI: <i>“Bayesian Models and Simulations in Cognitive Science”</i>	Chair: Andrew Wayne Dan PARKER: <i>“Reproducing Results: Why do Experiment and Simulation Care?”</i>
02:45 - 03:30	Jan SPRENGER: <i>“Science without Models - Resampling Simulations in Statistical Inference”</i>	Anouk BARBEROUSSE, Sara FRANCESCHELLI and Cyrille IMBERT: <i>“Varieties of Computer Simulations by Cellular Automata”</i>
03:30 - 04:15	Jaakko KUORIKOSKI and Aki LEHTINEN: <i>“Economic Model Building as Derivational Robustness Analysis”</i>	Paul HUMPHREYS: <i>“Some Relations Between Theory and Simulation Models”</i>
04:14 - 04:45	Coffee	
Plenary session 3	Room CZ9	
04:45 - 06:00	Chair: Maurice Schouten Paul Teller: <i>“Ramifications of Modeling for How to Think about Truth”</i>	

Saturday 13.10

Parallel session 7	Room CZ7	Room CZ6
09:00 - 09:45	Chair: Stathis Psillos Alisa BOKULICH: <i>“Model Explanations, Or How Fictions Can Explain”</i>	Chair: Christopher Pincock Frank HINDRIKS: <i>“Explanatory Engines, Mechanisms, and Nomological Machines”</i>
09:45 - 10:30	Mark NEWMAN: <i>“Models and Understanding”</i>	Uskali MÄKI: <i>“Models and the Locus of their Truth”</i>
10:30 - 11:00	Coffee	
Parallel session 8	Room CZ7	
11:00 - 11:45	Chair: Sebastian Lutz Robert BATTERMAN: <i>“Essential Models and Explanatory Mathematics”</i>	
Plenary session 4	Room CZ7	
11:45 - 01:00	Chair: Roman Frigg Stathis Psillos: <i>“Living with the Abstract: Realism and Models”</i>	

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