

Sommersemester / *Summer Term 2014*

BayCEER Kolloquium

Vortragsreihe Ökologie und Umweltforschung
Lecture series in Ecology and Environmental Research

Donnerstag 3. 7. 2014, 12:00 Uhr, H6

Anschließend Postkolloquium mit Mittagsimbiss im Foyer H6

PD Dr. Johannes Lenhard
Department of Philosophy, Bielefeld University

Calculated Surprises: On the Philosophy of Computer Simulation

One strategy of mathematization aims at transforming complex phenomena into an idealized setting thus reducing complexity. With simulation this strategy is getting into troubles when the models themselves are becoming complex and receive a partial autonomy. They show a rich dynamics that is (to an important degree) not derived from theories that go into these models, rather this dynamics is based on the conditions of model construction.

In particular, the process of simulation modeling significantly differs from traditional mathematical modeling. This difference is relevant from a philosophical point of view because mathematical models constitute the backdrop of much of modern sciences. The following features of simulation modeling will be discussed: artificiality and experimenting, visualization, plasticity, and epistemic opacity. These features, it will be argued, characterize simulation modeling as a new type of mathematical modeling.

The conclusion will be split: Simulation modeling opens up new options for intervening in complex situations, but - on the other side - the explanatory force of these models is called into question. Mathematical modeling, seen as a human activity to gain knowledge, acquires a somewhat more technical or artisan flavor:

Theory and technology are intertwined in computer modeling – natural sciences and engineering sciences seem to converge.

Do. /Thu. 12 st
Gebäude/Building
GEO
Hörsaal/Lecture hall
H6

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