

## EINLADUNG ZUM GASTVORTRAG

im Rahmen des Forschungsseminars (Doktoratsstudium) WS 2008/09

**am MONTAG, 10. NOVEMBER 2008, 17.00 UHR**

INSTITUT FÜR GEOGRAPHIE UND REGIONALFORSCHUNG  
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Dr.

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## **EMERGENCE AND COMPLEXITY**

– Examples from geomorphology, climate change and the geography of war

Dr Stephan Harrison is Associate Professor of Quaternary Science at the University of Exeter, Senior Research Associate at Oxford University Centre for the Environment and Director of Climate Change Risk Management ([www.ccrm.co.uk](http://www.ccrm.co.uk)). He is a climate change scientist with over 20 years research experience in landscape-responses to climate change and business implications of climate change. He has worked for twelve field seasons on the glaciers of Patagonia studying their late Quaternary fluctuation histories, and for four field seasons in the Tien Shan mountains of Kazakhstan. This work has been funded by NERC, European Union, the Japanese Government and the Royal Society. From this, he has published over 100 papers on past and present climate and landscape change. He is a member of the Environmental Research Groups of the Institute of Actuaries and the Emergency Planning Society.

Emergence is a characteristic of dynamic systems where the large-scale behaviour of the system is effectively independent of the behaviour of the small-scale components of that system. Scientific attempts to unravel the complexity of complex systems have tended to follow reductionist paths. However, there is compelling evidence to show that many physical and human systems display emergent behaviour and that our approaches to understand the complexity of systems may not always be able to mimic such behaviour. I will use several different examples from climate change, Quaternary science and the geography of war to discuss the ways in which emergence can be used as a device to understand complexity.