

Theoriekolloquium

Am **3. November 2011** um **14.15 Uhr** in **W2 1-143** hält

Herr Prof. Marc-Thorsten Hütt (Jabobs Universität Bremen)

einen Vortrag mit dem Titel

How few elements can systematically shape large-scale patterns

In many biological systems, variability, i.e. systematic differences between the system components, can be expected to outrank statistical fluctuations in the shaping of self-organized patterns. In principle, the distribution of single-element properties should thus allow predicting features of such patterns. Using a range of models for pattern formation, particularly for excitable systems, we explore this predictability of patterns and we show that single-element properties are systematically mapped onto patterns.

As a next step, we explore, how this scenario translates to dynamic processes on graphs, for which we recently discussed the graph equivalent of spatiotemporal patterns and its dynamical prerequisites.

Using a model of conflict dynamics on graphs as a starting point we then study the applicability of this shaping of patterns to various production and distribution processes in logistics, where biological pattern formation often serves as a role model for implementing and organizing forms of distributed computation and other tasks.

On a more general level our set of studies point out an additional layer of pattern regulation, which can potentially be exploited to shape the results according to the system's needs.

Interessierte sind herzlich eingeladen.

gez. Prof. Alexander Hartmann