

## **BMS Intensive Course "Coarse Grained Dynamics"**

April 22-23, 2013 at FU Berlin

Organized by: Marco Sarich and Natasa Durdevac

### **Abstract:**

For the analysis of dynamical systems in high dimensional or large discrete state spaces it is often necessary to derive a coarse grained description of the processes of interest. In this course, we will discuss fundamental concepts of such coarse grainings and several applications like the discretization of continuous Markov processes, the approximation of deterministic systems by stochastic processes, and graph/network partitioning.

Program:

### **Monday 22.04.2013**

15-16h Marco Sarich, FU Berlin

**Concepts for metastable decompositions of Markov processes**

16-17h Marco Sarich, FU Berlin

**Set-oriented coarse grainings of dynamical systems**

17-18h Natasa Durdevac, ZIB

**Analyzing complex, modular networks using random-walk-based approaches**

### **Tuesday 23.04.2013**

15-16h Péter Koltai, TU München

**Global stability design of parameter-dependent continuous time systems**

16-17h Marcus Weber, ZIB

**Infinitesimal Generator and Real World Applications**

17-18h **tba**