Skalenkaskaden in komplexen Systemen

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Gradient structures for chemical reactions via reacting particle systems

Project C08

Abstract:

In last seminar's talk, Alexander Mielke explained the meaning and importance of ‘gradient structures' behind the equations for chemically reacting concentrations. Gradient structures can be seen as a mathematically precise way to describe how free energy drives a system towards its equilibrium. However, there can be a multitude of gradient structures that describe the same equation; we would like to find a gradient structure that is in a sense natural for the problem. To do so, we need to move one scale down, and study the fluctuations of a system of stochastically reacting particles. Naturally, my talk will be self-contained.