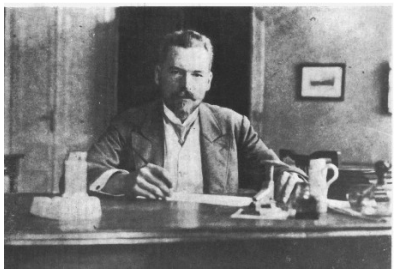

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Active noisy oscillators - analytical approaches, stochastic phase description, and coupling effects

Thursday, 6 September 2018 09:00 (45 minutes)

Many systems in physics and biology display somewhat irregular (noisy) but clearly oscillatory behavior. Most of these systems are kept outside of thermodynamic equilibrium (they are active) and can be well described in a stochastic framework.

In the talk I review a number of new developments from the theoretical side: how we can test whether the oscillator's dynamics is Markovian (using a non-equilibrium fluctuation-dissipation theorem), how we can define a phase for a stochastic oscillator (there are two proposals of a phase definition), how we can calculate correlation statistics like the power spectrum for a specific oscillator, and what can happen to the correlation statistics if we couple active noisy oscillators with each other.

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