



Tuesday, June 20, 2017 – 2:00 p.m.  
CFEL Seminar room IV (Bldg. 99)

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### Strong coupling thermodynamics and Markovian embedding strategies

Whenever a small-scale system is weakly coupled to macroscopic and Markovian reservoirs, it is possible to establish a consistent thermodynamic framework -- even for systems far away from equilibrium and even at the level of single, fluctuating trajectories. But outside the Markovian and weak coupling regime already the definition of basic quantities such as internal energy or heat becomes problematic. After reviewing the phenomenology of non-equilibrium thermodynamics, I will discuss a technique which allows to map a strongly coupled, non-Markovian system to a weakly coupled, Markovian one by appropriately including environmental degrees of freedom in the description of the system. Thus, by redefining the system-environment partition, it is possible to carry over a consistent thermodynamic framework to the strong coupling situation.

Host: Angel Rubio

