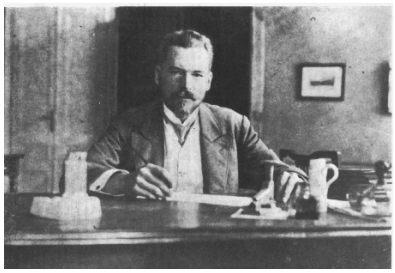

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Force from coarse graining nonequilibrium degrees of freedom

Monday, 16 September 2024 10:40 (20 minutes)

I will discuss paradigmatic examples of a tracer trapped in a harmonic potential and coupled to nonequilibrium baths: In particular, the tracer equation of motion and its relaxation function, for which this equation is averaged under an initial tracer position. For equilibrium, the tracer-bath force on average vanishes, a well known consequence of Boltzmann statistics. If tracer and bath are subject to different temperatures, the conditioned tracer-bath force is finite, and can be as large in magnitude as the force between tracer and trapping potential. For a bath particle with intrinsic memory, e.g., an active particle, even the noise felt by the bath particle takes a finite average under conditioning of the tracer. If the noise of the bath particle is non-Gaussian, the relaxation function of the tracer can be non-monotonic as a function of time.

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