A CONCEPTUAL MAPPING OF THE UNCHARTED, FAR-FROM-EQUILIBRIUM TERRITORIES

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The talk will revolve around a deceptively simple-sounding but notoriously challenging question at the nexus of condensed matter, statistical and nonlinear physics: “When far from equilibrium, in the presence of fluctuations, and faced with multiple steady states with small energy differences, how does a system evolve?” I will argue that the triple mechanism of nonlinearity, fluctuations, and feedback mechanisms is the key machinery for the structural and behavioural emergence and sustenance of complexity under strongly stochastic and highly nonlinear settings, which a handful of control knobs can guide.