



Seminar/Talk

Interaction-Induced Memories Reveal the Complexity of Disordered Matter

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Memory effects probe the complexity of disordered matter and its fundamental constituents and interactions. While models based on independent elements capture generic memories, interactions are predicted to produce many interaction-induced memories which so far have been observed in artificial systems only. Here we reveal that archetypical disordered materials - polycrystalline alloys, crumpled sheets, and steel wool - store multiple memories that strengthen with repeated cycling - in stark contrast to predictions for non-interacting systems. Interacting-based models capture our observations and predict a cascade of interaction-induced memory motifs, including the dominant one observed here. Our results reveal hitherto hidden complexity in disordered media, opening a fresh route towards the observation, modeling and utilization of interaction-induced memories, including for in-material computing.

Thursday, April 9, 2026 11:00am - 12:00pm

Mondi Seminar Room 2, Central Building



This invitation is valid as a ticket for the ISTA Shuttle from and to Heiligenstadt Station.

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