



Physics Colloquium

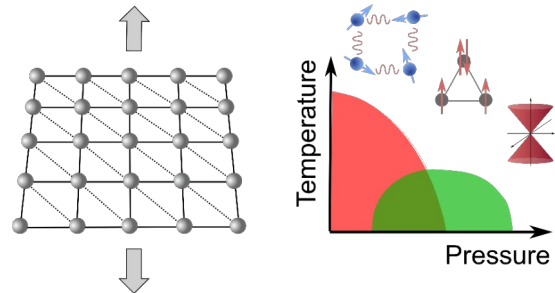
Tuesday, 10 January 2023 at 17:00

Dr. Elena Gati

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Squeezing Quantum Materials to the Extreme: Superconductivity and Magnetism under High Pressures and Strains

Quantum materials are famously known as those materials that display electronic states that cannot be understood in a single-electron picture that is used in traditional solid-state textbooks. Among the plethora of known exotic phenomena that can be found in their phase diagrams are unconventional superconducting and magnetic phases, which are not only highly interesting from a fundamental point of view, but also offer the potential for functionality in applications. Understanding and controlling the emergence of these quantum states remains one of the greatest challenges in contemporary condensed matter physics.



Motivated by highly innovative technical developments, pressure and lattice strains have emerged as unique tools to deliberately control the underlying interactions and symmetries in quantum materials. In this colloquium, I will provide an overview of how the methodological advancements of the last decade have paved the way to not only revisit long-standing open questions, but also make important new discoveries. In the end, I will highlight exciting future research directions for pressure tuning of quantum materials in light of designing novel quantum states with potential functionality.

Venue: Universität Leipzig, Faculty of Physics and Earth Sciences
04103 Leipzig, Linnéstraße 5, Lecture Hall for Theoretical Physics

Before the lecture, coffee and cookies are offered in front of the lecture hall.

We kindly ask you to observe the currently applicable measures for infection protection.