

Fall 2024 Physics Colloquium

Friday, October 18, 2024

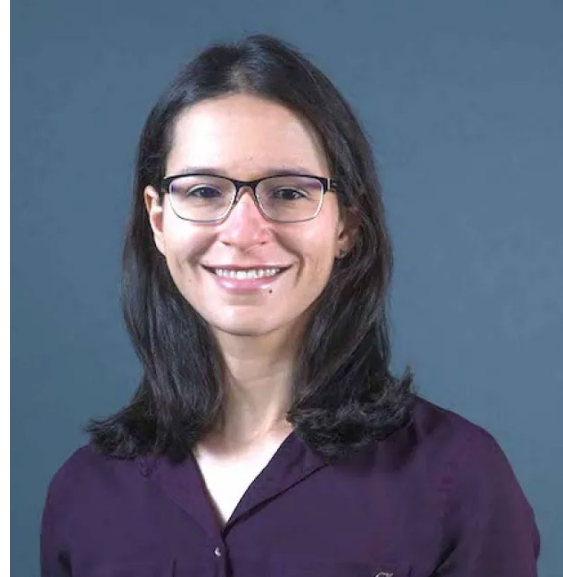
3:00 PM

PAS 201 or Zoom

(<https://arizona.zoom.us/j/81283840289>)

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Hunting for topological superconductivity: the case of UTe₂

Abstract: Superconductivity is a fascinating macroscopic quantum phenomenon known for more than a century. Over the past decade, topological superconductivity became a sought-after state of matter, in part due to its potential applications in quantum computing. Actinide superconductor UTe₂ is a recently-discovered contender for topological superconductivity. Yet, its superconducting order parameter remains a matter of contention. In this talk, I will first present a brief overview of key experimental results on the superconducting state of UTe₂. I will then discuss recent developments in sample synthesis combined with thermodynamic and spectroscopic measurements that shed light on the role of disorder, magnetic fluctuations, and time-reversal symmetry breaking in UTe₂. At the end of the talk, I will discuss current constraints on the superconducting order parameter of UTe₂ and highlight some of the pressing outstanding open questions.

** Refreshments served in PAS 218 at 2:30 PM – 3:00 PM **

