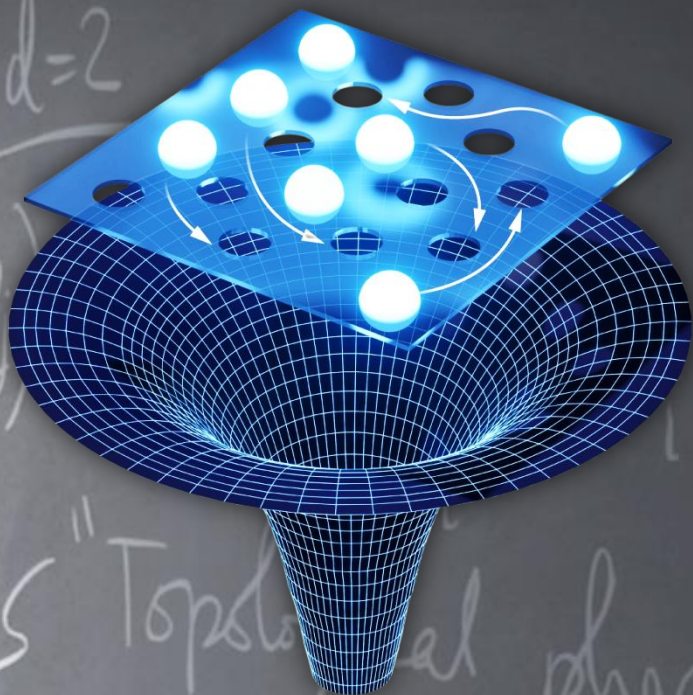


Quantum Entanglement in Nature: Superconductors and Black holes



Entanglement is the strangest feature of quantum theory, which Einstein dubbed "spooky action at a distance". Quantum entanglement can occur on a macroscopic scale with millions of electrons, leading to "strange metals" and novel superconductors which can conduct electricity without resistance even at relatively high temperatures. Remarkably, related entanglement structures also arise across the horizon of a black hole, and give rise to Hawking's black hole entropy. I will describe a simple model of many particle quantum entanglement which has shed light on long-standing problems in these distinct physical systems.



Prof. Subir Sachdev is the Herschel Smith Professor of Physics at Harvard University and holds the Raman Chair Professorship at the Indian Academy of Sciences (IASc). He is globally recognized for his groundbreaking contributions to Condensed Matter Physics, particularly in the field of Quantum Phase Transitions. His extensive research has garnered many prestigious awards, including the Dirac Medal. Committed to pushing the boundaries of knowledge, Prof. Sachdev remains a guiding force in shaping the modern Condensed matter physics landscape.

Venue: Auditorium, TIFR Hyderabad

16th December 2023, 04:00 PM

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