

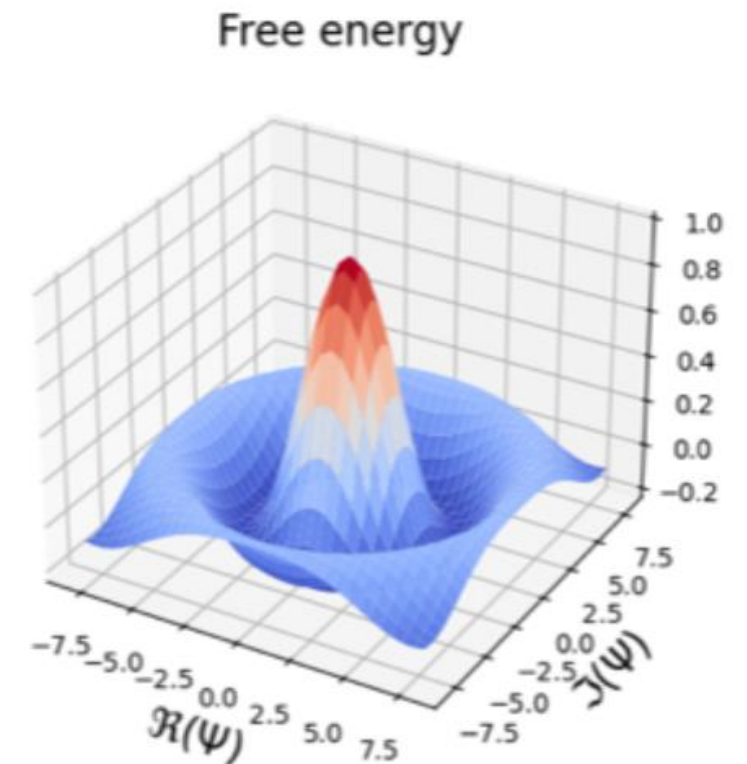
Physics Colloquium

Dr. Ettore Vitali, California State University, Fresno

Tracing the footprints of the elusive Higgs mode in Fermi gases

ABSTRACT

The celebrated Higgs boson, experimentally detected for the first time in 2012, has a very fascinating analogue in the realm of condensed matter physics and atomic physics. In cold Fermi gases, while it is natural to theoretically predict the existence of such a mode, it remains a big challenge to discover a probe that can clearly detect it. In 2020, an article was published suggesting that it is indeed possible to excite the Higgs mode in a Fermi gas by using a magnetic probe. In our group, we designed a computational experiment to investigate such a possibility, starting from a microscopic Hamiltonian. In the talk, I will review the basic physics of the Higgs mode in cold atoms, I will discuss the challenges to detect it, and I will report on the results of our study, published in 2024 [Phys. Rev. A 110, 033306].



3:00-4:00 p.m., Friday, November 8th, 2024

In-person in McLane Hall 162