

CONDENSED MATTER THEORY SEMINAR

- Subject: **The peculiarities of photon-mediated interactions and their effect on the Fermi surface**
- Speaker: **Dr. Francesco Piazza (Max-Planck-Institut für Physik komplexer Systeme, Dresden)**
- Date & time: **Friday, 3rd of February 2023 at 3:15 p.m.**
- Venue: **Room 01.114**
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Abstract

Motivated by recent experimental developments both in solid state and ultracold-atomic systems, I will discuss a situation where photons confined within a cavity are strongly coupled to a Fermi surface. This realises a novel, low-energy, and finite-density version of quantum electrodynamics. I will show how novel scenarios for the emergence of macroscopically ordered phases of matter can arise, and how these can be drastically modified by preparing non-Gaussian states of light in the cavity.