

CONDENSED MATTER THEORY SEMINAR

Subject: **Fundamental limit on electron-phonon interaction strength in metals**

Speaker: **Prof. Dr. Emil Yuzbashyan, Rutgers University USA**

Date & time: **Friday, December 9th, 2022 at 3:15 p.m.**

Venue: **Room 01.114 and online:**

Zoom Link:

<https://uni-frankfurt.zoom.us/j/96520912647?pwd=NWZneE5XQmlwZFJlUXJpcUhdNEtKQT09>

Abstract

I'll show that the dimensionless electron-phonon coupling λ cannot exceed a certain critical value (approximately 3.7) in metals. Increasing λ beyond this value leads to a structural instability accompanied by a metal-insulator transition. This also implies an upper bound on the superconducting T_c . We'll compare the bounds on λ and T_c with existing experimental data.