



Contribution ID: 132

Type: **Talk**

Quantum critical Eliashberg theory in a finite dimensional SYK model

Friday, November 25, 2022 9:45 AM (15 minutes)

We present a model of superconductivity in a higher dimensional generalization of the Sachdev-Ye-Kitaev model. In the normal state this model features a critical phase in (1+1) dimensions and a quantum phase transition in (2+1) dimensions. For (2+1) dimensions the superconductivity emerges around the quantum critical point. We derive the Eliashberg equations of superconductivity from the saddle point equations of the field theory in the limit of a large number of degrees of freedom. Finally we analyse the effect of pair-breaking and tuning of the boson to fermion flavour ratio on the superconducting phase.

Category

Solid State (Theory)

Authors: STANGIER, Veronika (KITI); SCHMALIAN, Jörg (KIT)

Presenter: STANGIER, Veronika (KITI)

Session Classification: Physics Talks - Solid State Theory

Track Classification: Physics talks