

Contribution ID: 38

Type: not specified

## Lighting up superconductivity

Thursday 15 May 2025 11:40 (40 minutes)

We will discuss recent experiments in the pseudogap phase of the high Tc cuprate YBCO that have been interpreted as the light induced Meissner effect. A special feature of these materials is a bilayer structure with a large difference of Josephson couplings within the bilayers and between them. Motivated by this hierarchy of scales, we introduce a model that consists of bilayers of copper-oxygen planes with a local super-conducting phase that persists up to the pseudo-gap temperature at equilibrium. Under pumping, the time evolution of the relative phase in the bilayers is described by a driven sine-Gordon equation. We will argue that the experimentally observed phenomena can be explained by a new type of dynamical instability in the sine-Gordon model triggered by the strong terahertz pump pulse. This interpretation suggests that these experiments reveal strong superconducting correlations in the pseudogap state but do not require photoinduced superconductivity.

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