

Abstract Submitted
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Non-equilibrium dynamics of forward scattering superconductors

ALEXANDER KEMPER, North Carolina State University — Recent experiments have observed a surprisingly high critical temperature in a monolayer of FeSe on SrTiO₃ an substrate. Among the proposed origins of this effect is enhancement or determination of the superconducting phase by a phonon within the SrTiO₃ substrate, whose effect on the FeSe monolayer is to provide a source of forward scattering. It remains an open question whether such a *forward scattering superconductor* is realized in the FeSe/SrTiO₃ system. Using a non-equilibrium Keldysh approach, we study the effect of a pump laser field on superconducting phase of a model forward scattering superconductor. We compare the resulting temporal dynamics to those of a more typical BCS-like *isotropic* superconductor, where the phonon scattering is not as limited. We demonstrate how pump-probe experiments can be used to distinguish the two types of superconductors under consideration.

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