

Abstract Submitted
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Charge density waves and superconductivity in a minimal tight-binding model¹ JASON W. SADOWSKI², K. TANAKA, Department of Physics and Engineering Physics, University of Saskatchewan, YUKI NAGAI, CCSE, Japan Atomic Energy Agency — Charge density waves (CDW) and superconductivity (SC) are observed in a variety of materials such as layered transition-metal dichalcogenides, high-temperature cuprates, organic compounds, and other novel superconductors. The question as to whether CDW cooperate or compete with SC in those materials is under hot debate. In this work, we study possible mechanisms of CDW and its interplay with SC within an extended Hubbard model. In particular, CDW states caused by van Hove singularities as due to the mechanism proposed by Rice and Scott [1] are examined in detail.

[1] T. M. Rice and G. K. Scott, Phys. Rev. Lett. **35**, 120 (1975).

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