

Abstract Submitted  
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**Superconductivity in layered cobaltates: a functional RG treatment** CHRISTIAN PLATT, MAXIMILIAN KIESEL, WERNER HANKE, Institute for Theoretical Physics, University of Wuerzburg, RONNY THOMALE, Ecole Polytechnique Federale de Lausanne — The superconducting state of water-intercalated cobaltates is still poorly understood. Starting with an effective three orbital model which fits the experimentally observed Fermi surface, we apply the functional renormalization group and study the phase diagram of  $\text{Na}_x\text{CoO}_2$  as a function of doping. Here, we find ferromagnetic and triplet-pairing tendencies near van-Hove filling as well as  $(d + id)$ -superconductivity for larger dopings. The calculated gap function in this  $(d + id)$ -phase reveals a near-nodal behavior, and an increased  $\text{CoO}_2$  layer distance promotes the ferromagnetic and triplet-pairing channels. Our findings are consistent with recent experimental observations. The cobaltates thus establish a chiral singlet superconductor based on transition metal oxides.

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