

Abstract Submitted
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Surface charging in d-wave superconductors TAMARA NUNNER,
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Gainesville, FL32611-8440 — Near surfaces d-wave superconductivity is suppressed
and competing order parameters can emerge. Of particular interest is the formation
of antiferromagnetism which can be accompanied by a charging of the surface sim-
ilar to the vortex case. We analyze this scenario for different surface orientations
by solving the Bogoliubov-de Gennes equations for a model Hamiltonian with com-
peting antiferromagnetic and d-wave superconducting interactions. In special limits
analytical solutions are possible and help to identify the role of Andreev bound
states. Finally, we discuss the implications of an angle-dependent surface charge for
the critical current through interfaces.

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