

Abstract Submitted  
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**Antiferromagnetism and d-wave superconductivity in the one-band Hubbard model using V-CPT**<sup>1</sup> A.-M.S. TREMBLAY, DAVID SÉNÉCHAL, PIERRE-LUC LAVERTU, MARC-ANDRÉ MAROIS, Université de Sherbrooke and RQMP — Using variational cluster perturbation theory (V-CPT) we study the competition between d-wave superconductivity and antiferromagnetism in the the  $t$ - $t'$ - $t''$ - $U$  Hubbard model. Large scale computer calculations reproduce the overall ground state phase diagram of the high-temperature superconductors as well as the one-particle excitation spectra for both hole- and electron-doping. We identify clear signatures of the Mott gap as well as of antiferromagnetism and of d-wave superconductivity that should be observable in photoemission experiments.

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