

Abstract Submitted
for the MAR07 Meeting of
The American Physical Society

Mott Transition, Antiferromagnetism, and d-wave Superconductivity in Two-Dimensional Organic Conductors¹ A.-M.S. TREMBLAY, BUMSOO KYUNG, Universite de Sherbrooke — We study the Mott transition, antiferromagnetism and superconductivity in layered organic conductors using Cellular Dynamical Mean Field Theory for the frustrated Hubbard model. A *d*-wave superconducting phase appears between an antiferromagnetic insulator and a metal for $t'/t = 0.3 - 0.7$, or between a nonmagnetic Mott insulator (spin liquid) and a metal for $t'/t \geq 0.8$, in agreement with experiments on layered organic conductors including κ -(ET)₂Cu₂(CN)₃. These phases are separated by a strong first order transition. The phase diagram gives much insight into the mechanism for d-wave superconductivity. Two predictions are made.

B. Kyung and A.-M.S. Tremblay, Phys. Rev. Lett. **97**, 046402 (2006)

¹Supported by NSERC (Canada), FQRNT (Québec), CFI (Canada), CIAR, Tier I Canada Research Chair Program (A.-M.S.T.)

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Date submitted: 16 Nov 2006

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