

Abstract Submitted
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Strongly correlated superconductivity and Mott transition¹ A.-M.S. TREMBLAY, Universite de Sherbrooke, SORDI GIOVANNI, ILL, Grenoble, France, PATRICK SEMON, Universite de Sherbrooke, K. HAULE, Rutgers University — Whether the pseudogap temperature T^* intercepts or merges with the superconducting dome is one of the key questions in the field of high-temperature superconductors. We study the normal and the d-wave superconducting phases at finite temperature in the two-dimensional Hubbard model within cellular dynamical mean-field theory and continuous-time quantum Monte Carlo. Above the critical value for the Mott transition, the superconducting T_c has a dome-like shape as a function of doping. The pseudogap temperature T^* intercepts the superconducting dome. Removing superconductivity, one finds that in the normal state, T^* ends at a finite-doping first-order transition that occurs at temperatures below the superconducting dome. That first order transition between a pseudogap metal and a strongly correlated metal is linked to the Mott transition at half-filling. Refs: G. Sordi et al., PRL 104, 226402 (2010); G. Sordi et al., PRB 84, 075161 (2011); G. Sordi et al., arXiv:1110.1392 (2011).

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