

Abstract Submitted
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Signatures of the Mott transition in the antiferromagnetic state of the two-dimensional Hubbard model LORENZO FRATINO, Royal Holloway Univ of London, PATRICK SEMON, Rutgers University, MAXIME CHARLEBOIS, Universite de Sherbrooke, GIOVANNI SORDI, Royal Holloway Univ of London, A.-M. S. TREMBLAY, Universite de Sherbrooke and Canadian Institute for Advanced Research — The properties of a broken-symmetry phase can be strongly influenced by the underlying normal state. Here we study the two-dimensional Hubbard model using cellular dynamical mean-field theory with continuous-time quantum Monte Carlo to map out the Néel state as a function of interaction U and temperature. We link a sharp change between weakly and strongly correlated antiferromagnetism to the underlying Mott metal-insulator transition at intermediate U . This result is based on a comparison of the values taken by the potential energy and the local density of states in the two phases, normal and antiferromagnetic.

Giovanni Sordi
Royal Holloway Univ of London

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