Abstract Submitted
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**Nonequilibrium dynamical mean-field study of the nonthermal fixed point in the Hubbard model** NAOTO TSUJI, Department of Physics, University of Tokyo, MARTIN ECKSTEIN, Max Planck Research Department for Structural Dynamics, University of Hamburg-CFEL, PHILIPP WERNER, Department of Physics, University of Fribourg — A fundamental question of whether and how an isolated quantum many-body system thermalizes has been posed and attracted broad interest since its ideal realization using cold atomic gases. In particular, it has been indicated by various theoretical studies that the system does not immediately thermalize but often shows "prethermalization" as a quasi-stationary state, where local observables quickly arrive at the thermal values while the full momentum distribution stays nonthermal for long time. Here we study the thermalization process for the fermionic Hubbard model in the presence of the antiferromagnetic long-range order [1][2]. Time evolution is obtained by the nonequilibrium dynamical mean-field theory. Due to classical fluctuations, prethermalization is prevented, and the transient dynamics is governed by a nonthermal fixed point, which we discuss belongs to a universality class distinct from the conventional Ginzburg-Landau theory. [1] N. Tsuji, M. Eckstein, P. Werner, Phys. Rev. Lett. 110, 136404 (2013). [2] N. Tsuji, P. Werner, Phys. Rev. B 88, 165115 (2013).

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