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Odd-frequency superconductivity in two-channel Kondo lattice SHINTARO HOSHINO, The University of Tokyo, YOSHIO KURAMOTO, Tohoku University — Unconventional superconductivity has been sought as an intriguing ground state or thermodynamic state in condensed matter physics. Among those states, we address the odd-frequency (OF) pairing state, which breaks the gauge symmetry, but has zero pairing amplitude at equal time. Possible realizations of the OF superconductivity have been theoretically proposed in a variety of strongly correlated electron systems. In particular, Emery and Kivelson have shown for the two-channel Kondo impurity that the OF pairing susceptibility is enhanced at the impurity site. However, no microscopic theory has established the OF pairing in the two-channel Kondo lattice. Recently, we have demonstrated the emergence of odd-frequency s-wave superconductivity in the two-channel Kondo lattice using the dynamical mean-field theory explicitly by divergence of the OF susceptibility. The corresponding order parameter is given by staggered composite-pair amplitude with even frequencies, which involves both localized spins and conduction electrons. The Kondo effect in the presence of two channels is essential for the present unconventional superconductivity.

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