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Evolution of a Large Fermi Surface in the Kondo Lattice JUNYA OTSUKI, Tohoku University, HIROAKI KUSUNOSE, Ehime University, YOSHIO KURAMOTO, Tohoku University — We investigate the Kondo lattice model with use of the continuous-time quantum Monte Carlo method, combined with the dynamical mean-field theory. The antiferromagnetic phase diagram is determined from a divergence of the corresponding susceptibility [1]. In the paramagnetic phase, crossover behavior is traced quantitatively to a heavy Fermi-liquid state from the local-moment state at high temperatures [2]. The momentum distribution in the low-temperature limit acquires a discontinuity at the location that involves the local-spin degrees of freedom. Even without the charge degrees of freedom for local electrons, the excitation spectra exhibit hybridized bands similar to those in the Anderson lattice. Temperature dependence in the zero-energy component of the self-energy is crucial in forming the Fermi-liquid state with the large Fermi surface. [1] J. Otsuki, H. Kusunose and Y. Kuramoto, arXiv:0808.3829; arXiv:0811.1102. [2] J. Otsuki, H. Kusunose and Y. Kuramoto, arXiv:0811.2613 to appear in Phys. Rev. Lett.

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