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Curie law, entropy excess, and superconductivity in heavy fermion metals and other strongly interacting Fermi liquids V.A. KHODEL, M.V. ZVEREV, Russian Research Centre Kurchatov Institute, VICTOR YAKOVENKO, Department of Physics, University of Maryland — Low-temperature thermodynamic properties of strongly interacting, itinerant Fermi liquids with fermion condensate are investigated. We demonstrate that the spin susceptibility of these systems exhibits the Curie-Weiss law, and the entropy contains a temperature-independent term. The excessive entropy is released at the superconducting transition, enhancing the specific heat jump ΔC and rendering it proportional to the effective Curie constant. The theoretical results are favorably compared with the experimental data on the heavy fermion metal $CeCoIn_5$, as well as ^{3}He films. Reference: cond-mat/0508275, Phys. Rev. Lett. (December 2005).

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