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Critical metal phase at the Anderson metal-insulator transition with Kondo impurities EDUARDO MUCCIOLO, University of Central Florida, STEFAN KETTEMANN, Jacobs University and POSTECH, IMRE VARGA, Budapest University of Technology and Economics — It is well known that magnetic impurities can change the symmetry class of disordered metallic systems by breaking spin and time-reversal symmetry. At low temperature, these symmetries can be restored by Kondo screening. It is also known that at the Anderson metal-insulator transition, wave functions develop multifractal fluctuations with power-law correlations. Here, we consider the interplay of these two effects. We show that multifractal correlations open local pseudogaps at the Fermi energy at some random positions in space. When dilute magnetic impurities are at these locations, Kondo screening is strongly suppressed. When the exchange coupling J is smaller than a certain value J^* , the metal-insulator transition point extends to a critical region in the disorder strength parameter and to a band of critical states. The width of this critical region increases with a power of the concentration of magnetic impurities. [S. Kettemann, E. R. Mucciolo, and I. Varga, Phys. Rev. Lett. **103**, 126401 (2009).]

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