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Quantum critical behaviour of the cluster glass phase MATTHEW CASE, National High Magnetic Field Laboratory, VLADIMIR DOBROSAVLJEVIC, National High Magnetic Field Laboratory and Dept. of Physics, FSU — In disordered itinerant magnets with arbitrary symmetry of the order parameter, the conventional quantum critical point between the ordered phase and the paramagnetic Fermi-liquid (PMFL) is destroyed due to the formation of the cluster glass (CG) phase. In this talk, we will discuss the quantum critical behaviour at the CG-PMFL transition. We will show that fluctuations due to quantum Griffiths anomalies induce a first-order transition from the PMFL at T=0, while at higher temperatures a conventional continuous transition is restored. This is in contrast to the behaviour of a collection of identical droplets where the second-order transition persists down to T=0.

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