Entropy landscape of phase formation in the vicinity of quantum criticality in Sr3Ru2O7

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In recent years the itinerant metamagnet Sr3Ru2O7 has been studied intensely both experimentally and theoretically. It is believed to be close to a quantum critical point in whose vicinity a new phase with 'electron nematic'-like transport properties is formed. Here we present a systematic magnetocaloric and specific heat study of this material. First we will discuss thermodynamic evidence for the nature of the phase transitions enclosing the anomalous phase region as well as the highly unusual properties of the phase itself. Second, we will present the results of a detailed study of the surrounding low and high field 'normal' states. In particular experimental data indicating a magnetic field dependent renormalisation of the Fermi liquid properties upon approaching the critical field will be discussed.