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Quantum criticality driven by geometrical frustration PHILIPP GEGENWART, Experimentalphysik VI, Augsburg University, Germany, Y. TOKIWA, Kyoto University, Japan, C. STINGL, Experimentalphysik VI, Augsburg University, Germany, T. TAKABATAKE, Hiroshima University, Japan — Geometrical frustration describes situations where interactions are incompatible with the lattice geometry and stabilizes exotic phases such as spin liquids which cannot be classified by conventional order parameter theory and display emergent excitations. Whether geometrical frustration of magnetic moments in metals can induce unconventional quantum critical points is an active area of research. We focus on the heavy-fermion metal CeRhSn with twodimensional triangular configuration of the Kondo ion. Low-temperature thermodynamic experiments prove zero-field quantum criticality. A striking anisotropy of the linear thermal expansion, displaying critical and non-critical behavior along and perpendicular to the basal plane, respectively, is ascribed to the effect of strong geometrical frustration. We further find evidence of fluctuating local 4f moments, implying a novel quantum critical spin liquid state with fractionalized quasiparticles.

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