

Abstract Submitted
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Evidence for ferroquadrupole order in YbRu₂Ge₂ from x-ray diffraction and elastoresistivity measurements ELLIOTT ROSENBERG, JIUN-HAW CHU, IAN FISHER, Stanford University, JACOB RUFF, CHESS — YbRu₂Ge₂ undergoes a non-magnetic phase transition at 10K, several Kelvin above a phase transition to a magnetically ordered state that is characterized by a unidirectional incommensurate spin density wave. Here, we show via high-resolution x-ray diffraction that the non-magnetic phase transition corresponds to a continuous tetragonal-to-orthorhombic structural phase transition. Elastoresistance measurements in the tetragonal state indicate a divergence of the quadrupolar strain susceptibility in the B_{1g} symmetry channel, implying that the structural phase transition is driven by quadrupolar order.

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