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Effects of uni-axial strain on electronic nematic state in $Sr_3Ru_2O_7$ DANIEL BRODSKY, MARK BARBER, University of St Andrews, Scotand and Max Planck Institute for Chemical Physics of Solids, Germany, CLIFFORD HICKS, Max Planck Institute for Chemical Physics of Solids, Germany, ROBIN PERRY, The University of Edinburgh, Scotland, ANDREW MACKENZIE, Max Planck Institute for Chemical Physics of Solids, Germany — $Sr_3Ru_2O_7$ exhibits a novel electronic phase in the vicinity of a magnetic field-tuned quantum critical point. This phase shows strong anisotropy under weak symmetry-breaking fields, so it is thought to be intrinsically nematic. We study this phase under anisotropic strain, using a piezoelectric-based device that can both compress and tension samples. We find that the phase responds strongly to anisotropic strain, and discuss this result in the context of various theoretical models for the phase.

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