

Abstract Submitted
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Gravity at a Kelvin: the generalized rigidity of superconducting quantum nematics KAI WU, Institute-Lorentz for Theoretical Physics, Leiden University, ARON BEEKMAN, RIKEN Center for Emergent Matter Science (CEMS), VLADIMIR CVETKOVIC, National High Magnetic Field Laboratory and Department of Physics, Florida State University, JAN ZAAANEN, Institute-Lorentz for Theoretical Physics, Leiden University — There is experimental evidence for the existence of zero temperature nematic quantum liquids. Resting on field theoretic dualities we demonstrate that its rigidity theory is closely related to linearized gravity. The difference is in the loss of Lorentz invariance and we show that the gravitons merge into a richer world of collective excitations such as rotational Goldstone modes deconfining at the crystal-nematic phase transition, yet to be detected experimentally.

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