Gravity at a Kelvin: the generalized rigidity of superconducting quantum nematics

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for Theoretical Physics, Leiden University — There is experimental evidence for
the existence of zero temperature nematic quantum liquids. Resting on field theo-
retic 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 Gold-
stone modes deconfining at the crystal-nematic phase transition, yet to be detected
experimentally.