

Condensed Matter Physics and the Nature of Spacetime

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Abstract

This essay considers the prospects of modeling spacetime as a phenomenon that emerges in the low-energy limit of a quantum liquid. It evaluates three examples of spacetime analogues in condensed matter systems that have appeared in the recent physics literature, and suggests how they might lend credence to an epistemological structural realist interpretation of spacetime that emphasizes topology over symmetry in the accompanying notion of structure.

Keywords: spacetime, condensed matter, effective field theory, emergence, structural realism

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