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On the depth of quantum space

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We focus on the question: "Is space fundamentally discrete or continuous?" in the context of current quantum gravity research. In particular, we paint a scenario based on the idea that 'quantum space' is a sort of peculiar condensed matter system, and on the speculation that its microscopic dynamics is described by a 'group field theory' formalism. We suggest that, from this perspective, on the one hand the question has no absolute meaning, so no answer, but also that, on the other hand, the reason why this is the case is the 'quantum space' is much richer and more interesting than we may have assumed. We also speculate on further physical implications of the suggested scenario.

Comments: 18 pages, 4 figures; amended version of a non-technical essay submitted for the third FQXi Essay Contest: "Is Reality digital or analog?"

Subjects: **Popular Physics (physics.pop-ph)**; General Relativity and Quantum Cosmology (gr-qc); High Energy Physics - Theory (hep-th)

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