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The Causal Set Path Integral and an Emerging Continuum

Friday, 12 July 2024 17:00 (30 minutes)

Causal set theory offers a simple and elegant picture of discrete physics. Unfortunately, though, the vast majority of causal sets do not look anything like continuum spacetimes, and must be excluded if the theory is to describe our actual universe. I will summarize recent results that show that almost all non-manifoldlike causal sets are, in fact, extremely strongly suppressed in the gravitational path integral. This does not quite yet demonstrate the emergence of a continuum—we don't understand enough about the remaining unsuppressed causal set—but it is an important step forward.

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