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The localization problem: an antinomy between measurability and causal dynamics

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The localization problem in relativistic quantum theory has persisted for more than seven decades, yet it is largely unknown and continues to perplex even those well-versed in the subject. At the heart of this problem lies a fundamental conflict between localizability and relativistic causality, which can also be construed as part of the broader dichotomy between measurement and unitary dynamics. In this talk, I briefly review the localization problem and discuss its significance more broadly within the foundations of physics, particularly as regards the antinomy between measurability and causal dynamics.

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