

How large are extra dimensions if they would exist?

Tuesday 8 April 2025 09:00 (1 hour)

Abstract: I discuss in a (hopefully) pedagogical manner the possibility of extra dimensions of space and the constraints on their sizes and detection. In particular we will distinguish between rigid and non-rigid extra dimensions, depending on how easily the extra dimensions can fluctuate. Without going to full-fledged string- or M-theory we can already deduce such properties using 1) entropy bounds, 2) energy conditions in relativity and 3) (more speculatively) the requirement that quantum gravity effects take place at black hole horizons. Throughout the talk I will highlight aspects of the so-called Swampland Program as a paradigm for addressing questions regarding the UV completion of quantum gravity.

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Session Classification: Plenary talks

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