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Characterizing negative scalar potentials: an Anti-Trans-Planckian Censorship Conjecture

Thursday 6 July 2023 14:45 (15 minutes)

While positive scalar potentials have been extensively studied in effective string theories, in this talk I will discuss properties of negative potentials. This is accomplished by an Anti-Trans-Planckian Censorship Conjecture (ATCC), inspired by a refinement of the TCC. The ATCC states that in a contracting universe, modes that become sub-Planckian in length violate the validity of the effective theory. I deduce a new asymptotic condition for the second derivative of the potential, implying a mass bound for scalar fields in anti-de Sitter solutions.

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