

# The singular nature of space-time

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## Abstract

We consider to what extent the fundamental question of space-time singularities is relevant for the philosophical debate about the nature of space-time. After reviewing some basic aspects of the space-time singularities within GR, we argue that the well-known difficulty to localize them in a meaningful way may challenge the received metaphysical view of space-time as a set of points possessing some intrinsic properties together with some spatio-temporal relations. Considering the algebraic formulation of GR, we argue that the space-time singularities highlight the philosophically misleading dependence on the standard geometric representation of space-time.

**Keywords:** General relativity, space-time singularities, space-time points, intrinsic properties, non-local feature, substantivalism, relationalism, algebraic formulation.

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