On the interplay between Geometry, Regularity and Causality

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ABSTRACT

Causality theory investigates the relationship of "events", which are modelled as points in a (time-oriented) Lorentzian manifold, also known as spacetime. There are several fundamental requirements on the causal structure of a space-time known as causality conditions. We will review these causality conditions with an emphasis on the interplay between geometry, topology and regularity. If time permits we will discuss also recent developments.