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Pankaj S Joshi* (psj@tifr.res.in), Department of Astronomy and Astrophysics, Tata Institute of Fundamental Research, Homi Bhabha Road, Colaba, Bombay, 400 005, India. *Topology in General Relativity*.

We consider here some of the important applications of topology in general relativity. In particular, the topologies on the space of all Lorentzian metrics is considered, and we point out the ‘problem of non-uniqueness’ which has major implications on the nature and structure of space-time singularities and their visibility properties, and other important features of general relativistic space-times. The causal structure of space-times are discussed and their connection to space-time topology is investigated. An important issue is the nature and structure of space-time singularities. Their genericity and stability is a major unresolved issue, especially when singularities are visible. This involves the issues of topology of space-time under consideration and those related to the measure defined on the same. Recent results in this connection will be discussed. (Received September 22, 2014)