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Cosmic time with quantum matter?

Friday 8 October 2010 09:30 (1 hour)

In this talk the physical foundations for setting up the cosmological standard model with a cosmic time parameter are examined. In particular, I discuss the role of Weyl's principle which asserts that cosmic matter moves according to certain regularity requirements. I argue that although Weyl's principle is often not explicitly mentioned in modern standard texts on cosmology, it is in fact necessary for a physically well-defined notion of cosmic time. I question the prospect of satisfying Weyl's principle, and hence define cosmic time, at a very 'early phase'of the universe if this phase is contemplated to be describable exclusively in terms of quantum theory.

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