

Importance of Knowing if the Cosmological Constant is Constant

One of the most perplexing issues in physics is why the energy of the vacuum is so incredibly small. Observations of an apparently nonzero vacuum energy have come as a great surprise. For the future development of fundamental physics, it is vitally important to know if the cosmological “constant,” as inferred from these observations, is truly constant, or if the observations point to some form of cosmic evolution (sometimes called “quintessence”). Precise exploration of these exciting questions is likely to have a major impact in physics as well as astronomy.

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