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A Critique of Supernova Data Analysis in Cosmology

Ram Gopal Vishwakarma, Jayant V. Narlikar

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Observational astronomy has shown significant growth over the last decade and has made important contributions to cosmology. A major paradigm shift in cosmology was brought about by observations of Type Ia supernovae. The notion that the universe is accelerating has led to several theoretical challenges. Unfortunately, although high quality supernovae data-sets are being produced, their statistical analysis leaves much to be desired. Instead of using the data to directly test the model, several studies seem to concentrate on assuming the model to be correct and limiting themselves to estimating model parameters and internal errors. As shown here, the important purpose of testing a cosmological theory is thereby vitiated.

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