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Title:	Constraining the dark energy statefinder hierarchy in a kinematic approach
Authors:	Mukherjee, A. (/jspui/browse?type=author&value=Mukherjee%2C+A.) Jassal, H.K. (/jspui/browse?type=author&value=Jassal%2C+H.K.)
Keywords:	Adopted Kinematic Extended Approach
Issue Date:	2019
Publisher:	IOP Science
Citation:	Journal of Cosmology and Astroparticle Physics, 2019(1).
Abstract:	In the present work, we have adopted a kinematic approach for constraining the extended null diagnostic of concordance cosmology, known as the statefinder hierarchy. A Taylor series expansion of the Hubble parameter has been utilised for the reconstruction. The coefficients of the Taylor series expansion are related to the kinematical parameters like the deceleration parameter, cosmological jerk parameter etc. The present values of the kinematical parameters are constrained from the estimated values of those series coefficients. A Markov chain Monte Carlo analysis has been carried out using the observational measurements of Hubble parameter at different redshifts, the distance modulus data of type Ia supernovae and baryon acoustic oscillation data to estimate the coefficient of series expansion of the Hubble parameter. The parameters in the statefinder diagnostic are related to the kinematical parameters. The statefinder diagnostic can form sets of hierarchy according to the order of the kinematical parameters. The present values of statefinder parameters have been constrained. The first set in the statefinder hierarchy allows $\Lambda$ CDM to be well within the $1-\sigma$ confidence region, whereas the second set is in disagreement with the corresponding $\Lambda$ CDM values at more than $1-\sigma$ level. Another dark energy diagnostic, namely the $Om$ -parameters, is found to be consistent with concordance cosmology.
Description:	Only IISERM authors are available in the record.
URI:	<a href="https://iopscience.iop.org/article/10.1088/1475-7516/2019/01/005">https://iopscience.iop.org/article/10.1088/1475-7516/2019/01/005</a> ( <a href="https://iopscience.iop.org/article/10.1088/1475-7516/2019/01/005">https://iopscience.iop.org/article/10.1088/1475-7516/2019/01/005</a> ) <a href="http://hdl.handle.net/123456789/2275">http://hdl.handle.net/123456789/2275</a> ( <a href="http://hdl.handle.net/123456789/2275">http://hdl.handle.net/123456789/2275</a> )
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