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Title:	Interacting dark energy with time varying equation of state and the H0 tension
Authors:	Mukherjee, A. (/jspui/browse?type=author&value=Mukherjee%2C+A.)
Keywords:	Dark Energy Chaplygin Gas Cosmological Models Cosmology
Issue Date:	2018
Publisher:	APS Physics
Citation:	Physical Review D, 98(12).
Abstract:	<p>In almost all interacting dark energy models present in the literature, the stability of the model becomes potentially sensitive to the dark energy equation-of-state parameter <math>w_x</math>, and a singularity arises at <math>w_x = -1</math>. Thus, it becomes mandatory to test the stability of the model into two separate regions, namely, for quintessence and phantom. This essentially brings a discontinuity into the parameter space for <math>w_x</math>. Such discontinuity can be removed with some specific choices of the interaction or coupling function. In the present work, we choose one particular coupling between dark matter and dark energy that can successfully remove such instability, and we allow a dynamical dark energy equation-of-state parameter instead of the constant one. In particular, considering a dynamical dark energy equation of state with only one free parameter <math>w_0</math>, representing the current value of the dark energy equation of state, we confront the interacting scenario with several observational data sets. The results show that the present cosmological data allow an interaction in the dark sector, in agreement with some latest claims by several authors, and additionally, a phantom behavior in the dark energy equation of state is suggested at present. Moreover, for this case, the tension on H0 is clearly released. In a final remark, we mention that, according to the Bayesian analysis, <math>\Lambda</math> cold dark matter (<math>\Lambda</math>CDM) is always favored over this interacting dark energy model.</p>
Description:	Only IISERM authors are available in the record.
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