

February 22, 2019

Title: *New parametrized equation of state for dark energy surveys*

Author: Celia Escamilla-Rivera

Abstract:

We present a new parameterisation for the equation of state (EoS) $w_x = P_x/\rho_x$, which can reproduce a $f(R)$ -like evolution with a precision between [0.5% – 0.8%] over the numerical solutions. Also, our proposal can render a variety of popular $f(R)$ models that are considered as viable candidates for the cosmic late time acceleration. By using observational data from baryonic acoustic oscillations, supernovae and cosmic chronometers we investigate the constraints on the new EoS parameters. This proposal set an EoS formulation which can be used in an efficient way and makes a good candidate to be implemented in a variety of surveys in order to test the $f(R)$ generic behaviour.