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Dark Energy phenomenology: the effective field theory approach

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The discovery of the accelerating expansion of the Universe is motivating an impressive amount of theoretical and observational activity. I will focus on recent and ongoing works that aim at a unifying description of dark energy and modified gravity models containing a scalar degree of freedom in addition to general relativity. Such an effective field theory approach allows, on the one hand, a transparent analysis of the possible theoretical mechanisms at the basis of dark energy; moreover, it provides a useful set of parameters that can be efficiently constrained with observations. I will show the present observational constraints based on the growth rate of cosmic structures and the forecasts for future surveys such as EUCLID.

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