Landscape of Cosmological mode

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We have great certainty on how gravity works around our solar system. However, at large scales, even though the LCDM model is in good agreement with cosmological data, we still have a considerable lack of understanding about the evolution of the universe, and its constituents. For this reason, in this talk, I will focus on testing the LCDM model. In particular, I will present a method to systematically construct alternative cosmological models, which allow us to characterize a variety of theories in terms of a few free parameters, and describe in a unified manner the landscape of cosmological models usually considered in literature. I will show some applications of this method, and discuss constraints on these parametrized models.