

Searching for Dark Energy

Prof. Dr. Luca Amendola

(Institut für Theoretische Physik, Heidelberg)

After more than 10 years from its discovery, the accelerated expansion of the Universe has still not found a convincing explanation. The best model so far requires the introduction of dark energy, a hypothetical, enigmatic component that drives the expansion. Building on the first idea of a classical field capable of resisting gravity's pull, Einstein's famous cosmological constant, cosmologists have proposed a number of alternative models. Although none of these has gained decisive support, they have prompted a new era of large scale efforts to map the history and geography of the Universe.

In this talk I will review the main concepts concerning dark energy and illustrate the large experimental projects to constrain its properties.