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## Holographic Universes

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The cosmological models must describe an accelerated expansion of the Universe in the current era. To achieve this, sources of matter capable of generating this acceleration are considered, which are commonly called dark energy. A cosmological constant  $\Lambda$  is an important candidate for dark energy that provides a good explanation for the current acceleration. But this faces some problems, such as the mismatch between the expected value of the vacuum energy density and the energy density of the cosmological constant, and blocking an explanation for why the densities of dark energy and matter Dark are of the same order in the present while evolving in quite different ways. Then, as an alternative, dynamic dark energy models have been proposed and analyzed in the literature. Among these, the Holographic Models of Dark Energy with interaction in the dark sector, stand out in current research, since they are based on the holographic principle. We proposed cosmological models of the Universe with holographic dark energy, considering interaction between the dark components of the universe. We compare the standard cosmological model with these models. And finally we analyze the parameters studied in the evolution of the Universe, and we contrast with observational data.

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