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FAT alternative dynamics to standard cosmology

In the era of upcoming cosmic surveys, the bright sky will be more revealing than ever, allowing us to disentangle the most intriguing mysteries of the origins, content, and evolution of the universe. In this talk, I will highlight the fundamentals of extended gravity theories, and I will focus on the quintessence, probabilistic gravity, and functors of action theories (FAT). I will emphasize the uniqueness of actionions, particles emerging from FAT frameworks, and how other extended gravity theories are connected with FAT. Then, I will discuss and present results on the dynamics of cosmologies in these 3 frameworks, in comparison to ΛCDM, with the goal to tackle cosmic tensions, such as H0. I will discuss the uniqueness of remodifying the quintessence, using 2 distinct dynamical system formalisms of the φΛCDM model. Finally, I will conclude and give some outlook.

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