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Perspectives on ASTRI observations of AGNs and connections with fundamental physics

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Very-high-energy (VHE) astrophysics represents a privileged environment for carrying out studies concerning fundamental physics. The high energies achievable in sources such as blazars allow us to access sectors of particle physics that are difficult to explore in laboratory experiments. The ASTRI Gamma Ray Telescope will produce exciting new observational data at VHE, which could provide us with information on several fundamental physics scenarios, such as: hadron beam, axion-like particles and Lorentz invariance violation. In this talk, we will discuss the effects on astrophysical spectra of the above-mentioned scenarios which, in some cases, can produce similar features, but we will also stress how to disentangle among the different scenarios thanks to their peculiarities. Oncoming data from ASTRI are expected to be able to test all the above-mentioned scenarios providing us hints at new physics or further constraining the parameter space of the different scenarios.

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