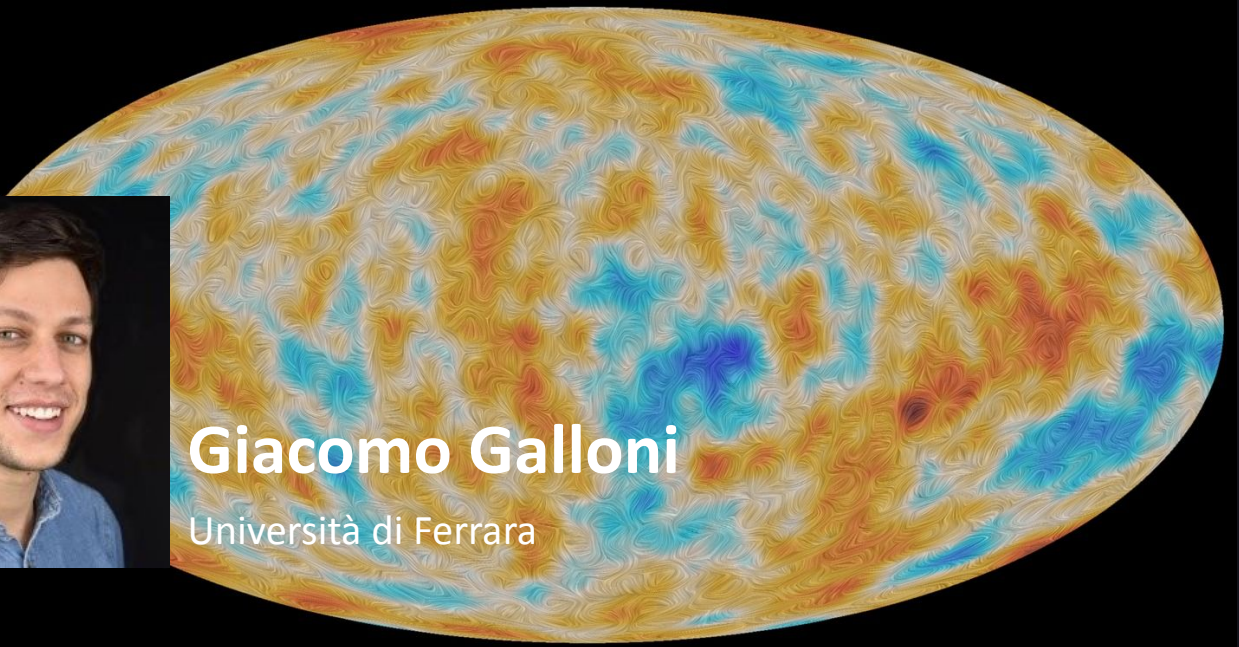# *ASTROPHYSICS SEMINAR*

Giacomo Galloni

Università di Ferrara

Robust constraints on tensor perturbations from cosmological data: A comparative analysis from Bayesian and frequentist perspectives

One of the central challenges in modern Cosmology is the precise characterization of the primordial tensor power spectrum, a cornerstone prediction of numerous cosmological models, particularly inflationary scenarios. These tensor perturbations carry distinctive imprints that can reveal their physical origins, making the robust reconstruction of their spectrum a pivotal goal for contemporary research. In this talk, I will present methods for constraining key parameters of the tensor power spectrum, such as the tensor-to-scalar ratio and the spectral tilt, with a particular emphasis on the statistical methodologies underpinning these inferences. I will critically examine the strengths and limitations of the standard Bayesian framework commonly employed in this context. Furthermore, I will demonstrate how complementary insights from a frequentist approach can deepen our understanding of the Bayesian results, offering a more nuanced perspective on the interplay between these statistical paradigms.

Friday December 20th 2024 time 15:30 CET

Join IN PERSON in Aula Galileo (Physics Dept., Tor Vergata University) or online on MS Teams: https://rebrand.ly/Seminar-Galloni

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