



*Physics Department seminar*  
DIPARTIMENTO DI FISICA, VIA CELORIA 16, MILANO

**Aula Consiglio VIRTUALE**  
<https://zoom.us/my/aula.consiglio>

**27 Gennaio 2021 – 14:30**

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**BeyondPlanck: a Bayesian framework for end-to-end  
Cosmic Microwave Background analysis.**

The Cosmic Microwave Background (CMB) is a fundamental probe of the early Universe, and played a key role in shaping the current cosmological model. State-of-the-art measurements have been performed by the Planck observatory, which operated at the Sun-Earth L2 point between 2009 and 2013, significantly improving our understanding of both the early stages of the Universe and of astrophysical emission from our Galaxy. Planck data opened a new epoch of CMB experiments, in which observations are no longer limited by instrumental noise, but by our knowledge of instrumental systematics and of the sky itself. In this talk I will describe the BeyondPlanck project, the first fully Bayesian end-to-end CMB analysis framework.

BeyondPlanck efficiently explores the joint posterior probability distribution of all parameters of interests (instrumental, astrophysical, cosmological), allowing a self consistent propagation of all sources of error to the final science constraints. I will also present the first BeyondPlanck results, based on Planck Low Frequency Instrument data.

