

# The ESA Euclid mission: a journey to understand the dark side of the universe

*Thursday 3 April 2025 09:00 (45 minutes)*

Euclid is a medium-class space mission led by ESA, with contributions from NASA, selected in October 2011 and successfully launched in July 2023. Its primary objective is to shed light on the nature of Dark Matter, which constitutes about 25% of the Universe's energy content, and Dark Energy, which makes up approximately 70% and is believed to drive the current accelerated expansion of the Universe. To achieve these goals, Euclid is creating the most comprehensive and precise 3D map of the Universe by surveying one-third of the sky. Understanding Dark Matter and Dark Energy requires performing a demanding statistical analysis to compare Euclid's data to cosmological models using two complementary probes: weak gravitational lensing and galaxy clustering. In this talk, I will provide an update on the Euclid mission since its launch, discuss its key science objectives, and explain how we construct theoretical predictions for its primary observables to achieve Euclid's ultimate goal: understand the dark Universe. I will also present the latest forecasts on cosmological parameters and extended models preparing ahead of the internal Euclid first cosmological data release.

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**Session Classification:** Plenary