

# Colloqui della Classe di Scienze

Anno Accademico 2018/2019

Sala Azzurra | Palazzo della Carovana  
Scuola Normale Superiore  
Piazza dei Cavalieri, 7 - PISA

**14 NOVEMBRE 2018**  
ore 15.00

**PAOLO NATOLI**

Università di Ferrara and INFN

*Exploring the early Universe through the  
cosmic microwave background*

**ABSTRACT:**

I will present the tightest observational bounds currently available on the early Universe, which are largely based on the legacy of the ESA Planck satellite. The emergent cosmological picture is consistent with a simple Lambda Cold Dark Matter ( $\Lambda$ CDM) model arising from an inflationary scenario. We do see, however, small quirks in the data that may or may not hint at new Physics. High accuracy measurements expected within the next decade, aimed at CMB polarization, will prove critical for our understanding of the early Universe. They are expected to push the model tests to an unprecedented precision, shedding light on the observed anomalies, and also to provide a direct window to Cosmic Inflation by constraining the predicted background of primordial gravitational waves.

