

Astrophysics and Space Science in Marche III: Big Bang, Big stars, Big Computers

Monday, 31 August 2026 - Friday, 4 September 2026

Jesi

Scientific Programme

The conference is structured around the **three fundamental pillars of modern cosmology**, i.e. **observations, theory, and computation**, following the **chronological evolution of the Universe**, from the primordial epoch to the late-time Universe.

Each day features **review talks** together with **focused research presentations** both by leading experts, with particular emphasis on the interplay between **astrophysics, cosmology, high-performance computing (HPC), and modern data science, including AI and machine learning**.

Monday - The Early Universe and the Cosmic Microwave Background

Discussion Session

Welcome Aperive + Poster Session

Tuesday - Cosmic Topology and Lattice Simulations of Inflation

Social Activity

Social Dinner

Wednesday - Data Analysis and Simulations for Cosmology

Discussion Session

Public Seminar (ENG)

Thursday - Gravitational Waves and Machine Learning

Discussion Session

Public Seminar (ITA)

Friday - High-Performance Computing and Knowledge Transfer in Astrophysics and Cosmology

End of the Conference

The programme will include contributions covering topics such as dark energy, dark matter, cosmological simulations, galaxy formation, gravitational waves, multimessenger astrophysics, cosmic microwave background physics, inflation, and the role of high-performance computing and AI-driven methods in modern cosmology.