

Martedì 3 luglio nella stanza del direttore si terranno i seminari del Dr. Elia Stefano Battistelli e del Dr. Paolo Pani, candidati alla chiamata come Professori di II fascia.

Ore 14.00

Dr. Elia Stefano Battistelli

Titolo: Looking beyond the Last Scattering Surface with Cosmic Microwave Background measurements

Abstract: I will review my recent activity in the design and development of Cosmic Microwave Background experiments. Spectral distortion of the CMB frequency spectrum and B-modes of the polarization of the CMB will be reviewed together with the experimental activity in the preparation of experiments like OLIMPO, LSPE, QUBIC and COSMO.

Ore 14.30

Dr. Paolo Pani

Titolo

Testing fundamental physics with gravitational waves

Abstract: The landmark detection of gravitational waves (GWs) has opened a new era in physics, giving access to the hitherto unexplored strong-gravity regime, where spacetime curvature is extreme and the relevant speed is close to the speed of light. In parallel to its countless astrophysical applications, this discovery can have also important implications for fundamental physics. In this context, I will discuss some outstanding, cross-cutting problems that can be finally investigated in the GW era: the nature of black holes and of spacetime singularities, the limits of classical gravity, the existence of extra light fields, and the effects of dark matter near compact objects. Current and future GW measurements will provide unparalleled tests of quantum-gravity effects at the horizon scale, astrophysical compact objects, ultralight dark matter, and of general relativity in the strong-field regime.