भारतीय खगोलभौतिकी संस्थान
Indian Institute of Astrophysics

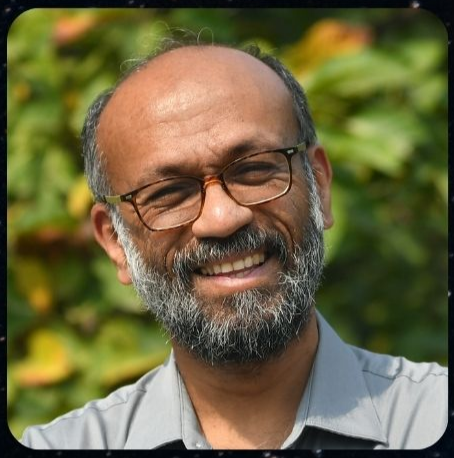
FOUNDATION DAY LECTURE

3:30 p.m., Monday, 6th April 2026
IIA Auditorium

Prof. Nissim Kanekar

Professor and DST J. C. Bose Fellow

National Centre for Radio Astrophysics
Tata Institute of Fundamental Research
Pune, India



The GMRT CATz Surveys: The HI properties of galaxies at cosmic noon

The weakness of the hyperfine HI 21cm line, the main tracer of the HI content of galaxies, has meant that we know little about the atomic gas mass of high-redshift galaxies and its evolution. Indeed, the evolution of the HI content of galaxies is one of the main open questions in galaxy evolution today. Stacking of the HI 21cm emission signals from a large sample of galaxies, observed simultaneously with a radio interferometer, can allow one to determine the HI properties of the galaxy population. In this talk, I will describe results from the Cold-HI AT z>~1 (CATz) HI 21cm surveys that we have been carrying out with the Giant Metrewave Radio Telescope, aiming to detect HI 21cm emission from star-forming galaxies in the redshift range z~1-3.0, i.e. the period of cosmic noon and beyond, to characterize the HI properties, and measure the gas accretion rate, the HI mass function, and the cosmological gas mass density, of star-forming galaxies over the last 11 billion years.

High Tea 5.00 p.m.,
ICNAPP Lounge, IIA