

COLLOQUIUM

By

Prof. Sanjeev Dhurandhar

Emeritus Professor, IUCAA Pune

Einstein's Centennial gift: Gravitational Waves Discovered



Abstract : Gravitational waves have been detected by the LIGO detectors in US. The discovery was announced on the 11th of February 2016. A century ago - in 1916 - Einstein predicted the existence of gravitational waves. The existence of the waves was established by the observations of the Hulse-Taylor binary pulsar whose orbit decays exactly as predicted by Einstein's general theory of relativity. Much before this, pioneering efforts by Joe Weber began in the 1960s for detecting these waves using resonant mass detectors. Weakness of the gravitational force implies that the waves are extremely difficult to detect - one must effectively measure distances much smaller than the size of a proton. After half a century, technology has taken immense strides and the current advanced detectors are now capable of reaching the requisite sensitivity to detect the waves. Gravitational waves carry information about their dramatic origins and about the nature of gravity that cannot be otherwise obtained. A new astronomical window to the universe is about to be opened. This talk will describe the physics of gravitational waves, the unprecedented requirements from technology and the detector, the current & future global efforts in this direction, the description of the gravitational wave event that was detected, the Indian contribution to the global effort and the astrophysics we can learn from this.

Tuesday, March 15, 2016 at 2.30 p.m

Pherozshah Mehta Auditorium

University of Mumbai, Vidyanagari

Centre for Excellence in Basic Sciences
Health Centre Building, University of Mumbai
Vidyanagari, Mumbai 400098
Phone: 91-22-26524983, Fax: 91-22-26524982

To be on the mailing list: swati@cbs.ac.in

All are welcome