



PONDICHERRY UNIVERSITY
DEPARTMENT OF PHYSICS

Invited Lecture

on

**"The Dawn of Gravitational Wave Astronomy: Observation of
Gravitational Waves from the merger of two black holes"**

by

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Date: 30th March, 2016 (Wednesday)
Time: 3:30 p.m
Venue: Raman Seminar Hall, Department of Physics

Abstract

In 1916, the year after the final formulation of the field equations of general relativity, Albert Einstein predicted the existence of gravitational waves. Almost a century after the prediction, on September 14, 2015 at 09:50:45 UTC (15:20 IST) the two detectors of the Laser Interferometer Gravitational-Wave Observatory (LIGO) simultaneously observed a transient gravitational-wave signal. The observed signal matches the waveform predicted by general relativity for the inspiral and merger of a pair of black holes and the ringdown of the resulting single black hole. The signal was observed with a matched-filter signal-to-noise ratio of 24 and false alarm rate estimated to be less than 1 event per 203 000 years, equivalent to a significance greater than 5.1σ . This discovery marks a beginning of a new and exciting era in astronomy, where the universe can be observed through a new window provided by Gravitational Waves.

All are Welcome

Dr Alok Sharan
(Seminar Coordinator)

Prof Ramaswamy Murugan
Professor & Head of the Department
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