भौतिक अनुसंधान प्रयोगशाला, अहमदाबाद

Physical Research Laboratory, Ahmedabad

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40_PRL Ka Amrut Vyakhyaan

Wednesday, 04 May 2022

@ 04:00 PM (IST)

"The Cold Universe: A Journey to our Cosmic Origins"

Dr. Pierre Cox

Director of research, CNRS,
Institut d'Astrophysique de Paris IAP, France.

https://youtu.be/chy7dkyGleI

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Title: "The Cold Universe: A Journey to our Cosmic Origins"

Speaker: Dr. Pierre Cox

Director of research, CNRS, Institut d'Astrophysique de Paris IAP, France.

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Abstract

"In this review, I will present some of the major recent observational results obtained on the so-called cold universe, spanning the range from proto-planetary systems to the most luminous star-forming galaxies in the early universe. These results have been made possible in the last decade due to the increased capabilities offered by recent facilities operating in the sub/millimetre, most notably ALMA & NOEMA. I will highlight some of the fundamental questions that have been resolved and others that haven't been answered yet and explore how future enhancements or new observatories will help make further significant progress in our understanding on how stars, planets and galaxies form and evolve."

The Speaker

Dr. Pierre Cox is a director of research from the CNRS working at the Institut d'Astrophysique de Paris (IAP). From 2013 to 2017, he was the director of Atacama Large Millimeter/submillimeter Array (ALMA) after being director of the Institut de Radioastronomie Millimétrique (IRAM) in Grenoble from 2006 to 2013. He is known for his research in the area of millimeter and infrared observations of star-forming regions, evolved stars, and high-redshift galaxies. Today he leads major observational efforts to study the physical properties of galaxies in the early universe.

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About PRL

The Physical Research Laboratory (PRL), known as the “cradle of space science” in India, is one of the premier research institutes founded in 1947 by Prof. Vikram Sarabhai, a renowned Cosmic Ray Scientist, a great visionary and institution builder. PRL played a seminal role in producing a highly motivated cadre of space scientists and the technologists of highest international repute. The first scientific rocket launched from Thumba on 21st November-1963 and many other rockets launched thereafter contained payloads developed at PRL. Dr. Sarabhai initiated many of these scientific and technical activities at PRL which eventually led to the formation of the Indian Space Research Organization (ISRO). Therefore, PRL is known as the “cradle of space science” in India. Further, the research in the area of Plasma Physics expanded to the formation of the Institute of Plasma Research (IPR).

As an institution PRL is unique in that it conducts fundamental research in a wide range of research areas from the Earth to the cosmos, and comprising Astronomy and Astrophysics; Solar Physics; Space and Atmospheric Sciences; Theoretical Physics; Geosciences; Atomic, Molecular and Optical Physics, Astrochemistry; and Planetary Sciences and Space Exploration. PRL is one of the rare research institutes of international repute wherein research in such diverse fields of sciences is carried out using several state-of-the-art experimental facilities that exist under one umbrella.

Along with the ongoing research, several new initiatives have been taken up during the last few years. The Multi-Application Solar Telescope (MAST) at Udaipur Solar Observatory has been operationalized. PRL initiated scientific programmes in frontier areas of research, which include a search for exo-planets, laboratory studies of interstellar grains, laboratory synthesis of cold astromolecules and experimental studies in the field of quantum optics. PRL is also developing several scientific payloads as a part of ISRO’s larger vision and contributing to roadmap for competitive scientific exploration of the solar system and beyond. In particular, PRL has been contributing significantly not only in building instruments for space missions, such as Chandrayaan-1, Chandrayaan-2, AstroSat and upcoming Aditya-L1, Chandrayaan-3 and planetary and space missions, but also by bringing out new and insightful science results.

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