

TATA INSTITUTE OF FUNDAMENTAL RESEARCH
DEPARTMENT OF ASTRONOMY & ASTROPHYSICS

Speaker : Prof. Y. Tawara
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Title : The Diffuse Intergalactic Oxygen Surveyor(DIOS) mission

Day, Date & Time : Tuesday, 8 December, 2009 at 16.00 hrs

Venue : Lecture Theatre (AG-66)

Abstract

The Diffuse Intergalactic Oxygen Surveyor (DIOS) mission is aimed at conducting high sensitivity soft X-ray survey over a wide solid angle of the sky and is designed based on the scientific goal of detecting warm-hot intergalactic medium (WHIM). WHIM is important probe to study large-scale structure of the universe formed by the dark matter and can be traced by oxygen K-lines since the temperature of WHIM is considered to be $10^5 - 10^7$ K. Goal of our mission is to perform imaging-spectroscopy of OVII(561, 568, 574 eV) and OVIII(653 eV) emission lines with 2 eV resolution to reveal spatial distribution of WHIM in the red shift range of $0 < z < 0.3$. The core instruments are four-stage X-ray telescope FXT and the focal plain instrument XSA (X-ray Spectrometer Array). Present status of the DIOS mission is shown in this talk.