

TATA INSTITUTE OF FUNDAMENTAL RESEARCH
DEPARTMENT OF ASTRONOMY & ASTROPHYSICS

SPECIAL ASTRONOMY SEMINAR

April 8, 2010

Speaker : Dr. Diego Altamirano
University of Amsterdam

Title : Accretion-powered millisecond X-ray pulsars:
12 years of discoveries

Day, Date & Time : Monday, 12 April, 2010 at 11.30 hrs

Venue : TAP Seminar Room (A-269)

(J. S. Yadav)

Abstract

Accretion-powered millisecond X-ray pulsars (AMSPs) had been predicted in the early 1980s as the progenitors of millisecond radio pulsars. However it was not until 1998 that the first AMSP was discovered. Since then, a total of 12 AMSPs have been found out of the >150 Low-mass X-ray binaries (LMXB) known up to date. Since the theoretical prediction of the existence of AMSPs was made, the main issue remained to explain the lack of pulsation in the persistent X-ray emission of the majority of LMXBs. In recent decades many theoretical efforts have been made to explain this, the main question remaining whether the pulsation is hidden from the observer or not produced at all. In this talk I will summarize the last 12 years of discoveries and discuss the most competing models today. I will also discuss why ASTROSAT is needed to further understand these systems.