

## THURSDAY COLLOQUIUM

## **Department of Physics, Tsinghua University**

http://www.phys.tsinghua.edu.cn/Colloquium/

**Title** The formation of large galactic disks: revival or survival?

Speaker Francois Hammer Director of CNRS

## Venue 清华大学理科楼郑裕彤讲堂 & Date 2011年10月20日16:00

**Abstract:** Using the deepest and most complete observations of distant galaxies, we investigate how large disks could have been formed. Observations include spatially-resolved kinematics, detailed morphologies and photometry from UV to mid-IR. Six billions years ago, half of the present-day spiral progenitors have anomalous kinematics and morphologies, as well as relatively high gas fractions. Gas-rich major mergers, i.e., fusions between galaxies of similar mass, are found to be the likeliest driver for such strong peculiarities. This leads to a new channel of disk formation, e.g. many disks are reformed after gas-rich mergers. This is found in perfect agreement with predictions from the state-of-the-art LCDM semi-empirical models: the apparent high fraction of mergers is due to our sensitivity in detecting mergers at all phases, from pairs to relaxed post-mergers. The scenario can be finally compared to properties of nearby galaxies, including the Milky Way, M31 and galaxies showing ultra-faint, gigantic structures in their haloes.

## Introduction to the Speaker



Francois Hammer is director of research in French CNRS, he codirects the Sino-French international lab "Origins". He directed previously the GEPI (Galaxies, stars, physics and Instrumentation) lab in Meudon (Paris observatory). In astrophysics he is a well known specialist of galaxy formation and evolution, and a major participant of French ELT project. He was the PI of the FLAMES/GIRAFFE (optical fibre-fed multi-object spectrograph on the ESO Very Large Telescope), the French PI of X-SHOOTER at VLT and the PI of EVE for the E-ELT.