

**Tata Institute of Fundamental Research
and
Ramanujan Mathematical Society
are pleased to present**

**Mathematical Panorama Lectures
(A National Mathematics Year Event)**

Professor Etienne Ghys, Ecole Normale Supérieure, Lyon, France will give a course of 10 lectures (Panorama lectures) at the

**Tata Institute of Fundamental Research, Mumbai,
April 9-14, 2012.**

About the Speaker: Professor Etienne Ghys is a Distinguished Professor of CNRS, France. He is a Fellow of the French Academy of Sciences of “l’Institut de France” and was one of the Plenary speakers at the International Congress of Mathematicians at Madrid (2006). D’Alembert medal of the French Mathematical Society (2010) and “Docteur Honoris Causa” of the University of Geneva (2008) are some of his numerous other honours. He has made important contributions in various areas of mathematics including Differential geometry, Global analysis, Dynamical systems and ergodic theory.



About the Course: This will be a course of 10 lectures (11:30 AM – 12:30 PM on all days and 15:00 PM – 16:00 PM during 9–12 April). The topic of the lectures is:

The dynamics of vector fields in dimension 3

Abstract: The dynamics of vector fields on surfaces is fairly well understood. Starting from dimension 3, one can encounter more complicated and interesting phenomena, like chaotic behaviour for instance. In this series of talks, I would like to give a general introduction to the qualitative dynamics of flows on 3-manifolds. I will begin at a very elementary level and I will describe a great number of significant examples. Then, depending on time, I shall discuss the following three aspects :

- The many attempts to describe all Anosov flows and some conjectures.
- The search for periodic solutions, around the former Seifert and Weinstein’s conjectures, Kupberg example, Hofer and Taubes’s theorem, and the conjecture in the volume preserving case.
- The construction of Birkhoff sections, the concept of left handed vector field, and conjectures concerning geodesic flows in negative curvature.

**All are welcome
(Live webcast: <http://webcast.icts.res.in/>)**