

**AMSS-PolyU Joint Research Institute
Distinguished Lecture by**

Professor Gang Tian
Peking University and Princeton University
Symplectic Geometry revisited



Abstract

Symplectic Geometry is a branch of geometry and topology which studies symplectic manifolds. It has its origins in the Hamiltonian formulation of classical mechanics where the phase space of certain classical systems takes on the structure of a symplectic manifold, i.e., the total space of the cotangent bundle of a space. Because of a result of Darboux about a hundred years ago, the usual study of symplectic manifolds do not involve local invariants such as curvature, rather through more topological methods. Symplectic geometry interacts with many other branches of mathematics, such as, complex geometry and 4-dimensional topology. In this lecture, Professor Tian will give an overview on developments of symplectic geometry in last two decades, including an introduction on basic objects in symplectic geometry and some classical results. Professor Tian will also discuss symplectic invariants and their connections to the string theory and elementary geometry we have learned in high school and college, as well as some future directions in symplectic geometry, especially, a recent and unconventional approach by using curvature flow.

Biography

Research Areas:

Differential Geometry, Geometric Analysis, Symplectic Geometry

Education:

- Ph.D. in Mathematics, Harvard University, 1988
- M. S. in Mathematics, Peking University, China, 1984
- B. S. in Mathematics, Nanjing University, China, 1982

Employment:

- Higgins professor of Mathematics, Princeton University, NJ
- Simons Professor of Mathematics, M. I. T., Cambridge, MA
- Professor of Mathematics, Courant Institute of Mathematical Sciences
- Professor of Mathematics, Peking University, Beijing, China
- Director, Beijing International Center for Mathematical Research

Fellowships and Honors:

- Elected to Chinese Academy of Sciences, 2001
- Elected to American Academy of Arts and Sciences, 2004

Date : 17 December 2012 (Monday)

Time : 4:00pm – 5:00pm (Tea reception at 5:15pm)

Venue: Y303, Lee Shau Kee Building, PolyU

For enquiry, please contact Miss Eunice Hung at 3400 3908 or eunice.hung@polyu.edu.hk

ALL ARE WELCOME !