



# Hong Kong Geometry Colloquium

**Saturday, 30 April 2005**

**Rm. 222, Lady Shaw Building, CUHK**

Time: 10:00 a.m. – 11:00 a.m.

Speaker: **Professor Hu Yi (University of Arizona)**

Title: **Factorization of Birational Maps and Geometric Invariant Theory**

**Abstract:** Perhaps the simplest and hardest problem in algebraic geometry is to classify all algebraic varieties. Understanding the relation between two birational algebraic manifolds is one of the main steps. We will explain that one can obtain one algebraic manifold from another (of the same birational class) by realizing them as GIT quotients. Here GIT stands for Geometric Invariant Theory. This reduces the problem to the existence of GIT wall-crossing flips, which itself is a major development of GIT in the 90s.

All the technical terms embedded in the above paragraph will be explained. Elementary examples will be used to illustrate the points. Previous knowledge on the subject is not a must.

Time: 11:30 a.m. – 12:30 p.m.

Speaker: **Professor Akito Futaki (Tokyo Institute of Technology)**

Title: **Stability and Canonical Kähler Metrics**

**Abstract:** In this talk I will review a conjecture on K-stability and the existence problem of extremal Kähler metrics. K-stability measures the stability of degenerations of the polarized manifold in consideration, and this stability condition is conjectured to be equivalent to the existence of Kähler metric of constant scalar curvature.