



**The Hong Kong University of Science and Technology**

**Department of Mathematics**

**Hong Kong Geometry Colloquium**

**ADHM sheaf theory and related moduli problems**

**By**

***Prof. Wu-Yen Chuang***  
***National Taiwan University***

**Abstract**

In this talk I will introduce ADHM sheaf theory of local curves, which is an alternative construction for the local stable pair theory of Pandharipande and Thomas. The wallcrossing formula can be derived and used to compute higher rank DT invariants. If time permits, I will also discuss a new formalism to compute the Poincare/Hodge polynomials using a recursive relation coming from ADHM sheaf theory.

***Date*** : ***Saturday, 15 January 2011***  
***Time*** : ***10:00a.m.-11:00a.m.***  
***Venue*** : ***Room 1505, Academic Building***  
***(near Lifts 25 & 26), HKUST***

**Ruan's cohomological crepant resolution conjecture for symmetric products of smooth toric surfaces**

**By**

***Prof. Wan Keng Cheong***  
***National Cheng Kung University***

**Abstract**

Let  $S$  be any smooth toric surface. Ruan's cohomological crepant resolution conjecture predicts that the Chen-Ruan cohomology ring of the  $n$ -fold symmetric product of  $S$  is isomorphic to the quantum corrected cohomology ring of the Hilbert scheme of  $n$  points in  $S$ . I will give a strengthening and a sketch of the proof of the prediction for the equivariant theory.

***Date*** : ***Saturday, 15 January 2011***  
***Time*** : ***11:20a.m.-12:20noon***  
***Venue*** : ***Room 1505, Academic Building***  
***(near Lifts 25 & 26), HKUST***

***All are welcome!***

**Light refreshment will be provided at Room 3493 from 11:00 am to 11:20 am**