


**INFO SHEET**

August 2, 2011

QUEEN'S UNIVERSITY AT KINGSTON  
 Department of Mathematics and Statistics  
<http://www.mast.queensu.ca>

CALENDAR		
<b>Wednesday, August 3</b>	<b>Summer Number Theory</b>  Time: 3:00 p.m. – 4:00 p.m. Place: Jeffery 422	<b>Speaker:</b> Hector Pasten (Queen's) <b>Title:</b> Belyi's theorem and ABC conjecture  <b>Abstract Attached</b>
<b>Thursday, August 4</b>	<b>CYMS Seminar</b>  Time: 1:00 p.m. Place: Jeffery 422	<b>Speaker:</b> Professor Jeng-Daw, National University of Taiwan, Taipei <b>Title:</b> Families of Calabi-Yau varieties  <b>Abstract Attached</b>
<b>Wednesday, August 10</b>	<b>Conference Room</b>  Time: 11:30 a.m. Place: Jeffery 521	<b>M.SC Student:</b> Andrew Harder <b>Title:</b> Moduli Spaces of K3 Surfaces with Large Picard Number  <b>Supervisor:</b> N. Yui
<b>Thursday, August 11</b>	<b>CYMS Seminar</b>  Time: 1:00 p.m. Place: Jeffery 422	<b>Speaker:</b> Sara Angela Filippini, Università dell'Insubria, Italy <b>Title:</b> A rigid Calabi-Yau 3-fold  <b>Abstract Attached</b>
<b>Thursday, August 11</b>	<b>Conference Room</b>  Time: 2:00 p.m. Place: Jeffery 521	<b>M.SC Student:</b> Andrew Brennan <b>Title:</b> Convergence Rates of Gibbs Samplers for uniform Distributions  <b>Supervisor:</b> A. R. Mansouri
<b>Friday, August 19</b>	<b>Conference Room</b>  Time: 1:00 p.m. Place: Jeffery 521	<b>Ph.D. Oral Student:</b> Valdemar Tsanov <b>Title:</b> Embeddings of flag manifolds and cohomological components of modules  <b>Supervisor:</b> I. Dimitrov
<b>Tuesday, August 30</b>	<b>Conference Room</b>  Time: 1:00 p.m. Place: Jeffery 521	<b>Ph.D. Oral Student:</b> Emily Redelmeier <b>Title:</b> Real Second-Order Freeness and Fluctuations of Random Matrices  <b>Supervisor:</b> J. A. Mingo

Items for the Info Sheet should reach Anne (burnsa@mast.queensu.ca) by noon on Monday. The Info Sheet is published every Tuesday.

**Wednesday, Aug 3, 3:00 p.m. Jeffery 422**

Speaker: Hector Pasten (Queen's)

Title: Belyi's theorem and ABC conjecture

**Summer Number Theory Seminar**

**Abstract:** In 1991 Elkies used Belyi's theorem on ramified coverings of the projective line in order to show that Mordell's conjecture follows from ABC conjecture. After Elkies' work, several authors have explored the idea of combining ABC conjecture and Belyi's theorem, obtaining surprising consequences of ABC conjecture. In this talk I will explain how the general idea works.

**Thursday, August 4, 1:00 p.m. Jeffery 422**

**CYMS Seminar**

Speaker: Professor Jeng-Daw Yu

Title: Families of Calabi-Yau varieties

**Abstract:** Given a family of Calabi-Yau varieties with a maximally generating fiber, one can specify the periods of the family as functions expanded at that fiber. In the first part of the talk, we will discuss the properties of the mirror map constructed from these periods. In the second part, we will discuss some further speculations on the relations between the periods and the arithmetic of the total space of the family, in particular in the case if the total space is itself Calabi-Yau.

**Thursday, August 11, 1:00 p.m. Jeffery 422**

**CYMS Seminar**

Speaker: Sara Angela Filippini

Title: A rigid Calabi-Yau 3-fold

**Abstract:** The talk is based on the paper “A rigid Calabi–Yau 3-fold” [arxiv.org/abs/1102.1854](https://arxiv.org/abs/1102.1854)), joint work with Dr. Alice Garbagnati. We analyze some geometric properties of the rigid Calabi–Yau threefold  $Z$ , introduced by Beauville, obtained as a quotient of  $E^3$ , where  $E$  is a specific elliptic curve. We describe the cohomology of  $Z$  and give a simple formula for the trilinear intersection form on  $Pic(Z)$ . We describe some projective models of  $Z$  and relate these to its generalized mirror.

By contracting some curves on  $Z$  and smoothing the resulting variety, we obtain other non rigid Calabi–Yau threefolds. One of these does not appear in the list of Braun, Candelas and Davies of known Calabi–Yau threefolds with small Hodge numbers.