ARITHMETIC AND GEOMETRY OF ALGEBRAIC VARIETIES

WITH SPECIAL EMPHASIS ON

CALABI–YAU VARIETIES AND MIRROR SYMMETRY

NOVEMBER 1–2, 2008

The Fields Institute, 222 College Street, Toronto

Organized by James D. Lewis (Alberta) and Noriko Yui (Queen's)

NOVEMBER 1, 2008

9:30am   **Steven Lu**, QUAM
      On the structure of algebraic varieties and holomorphic curves (the case of nef $-K$)

10:30am   **Tatyana Foth**, University of Western Ontario
      Varieties of complex Lie algebras

11:30am   **Andrey Todorov**, University of California Santa Cruz
      Holomorphic Metrics, Flat Connections on the Moduli Space of Hodge Structures and Proof of the Global Torelli Theorem for polarized CY manifolds

12:30pm–2:00pm   **Lunch**

2:00pm   **Matthew Ballard**, University of Pennsylvania
      Understanding derived categories of sheaves on singular projective varieties

3:00pm   **Chris Brav**, University of Toronto
      Tilting in derived categories

4:00pm   **Fernando Gouvêa**, Colby College/Queen's University
      Rigid Calabi–Yau threefold over Q are modular

5:00pm   **James Lewis**, University of Alberta
      Biextensions associated to algebraic cycles, I

7:00m   **Workshop Dinner**

NOVEMBER 2, 2008

9:30am   **Andrey Novoseltsev** , University of Alberta
      Closed form expressions for Hodge numbers of Calabi-Yau complete intersections

10:30am   **Ying Zong**, The Fields Institute/University of Toronto
      Hypersymmetric abelian varieties

11:30am   **Su-Jeong Kang**, University of Alberta
      The general Hodge conjecture and Calabi-Yau varieties

12:30pm   **Noriko Yui**, Queen's University
      On the modularity of certain K3 surfaces with non-symplectic group actions

Afternoon **Discussions**