ARITHMETIC AND GEOMETRY OF ALGEBRAIC VARIETIES

WITH SPECIAL EMPHASIS ON

CALABI–YAU VARIETIES AND MIRROR SYMMETRY

NOVEMBER 3-4, 2007

The Fields Institute, 222 College Street, Toronto

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

November 3, 2007

9:30am   **Ling Long**, Iowa State University
       Modularity of algebraic varieties

10:30am   **Yifan Yang**, National Chiao Tung University, Taiwan
       **Monodromy and S_4 modularity of Picard–Fuchs differential equations for
        Calabi–Yau threefolds**

11:30am   **Amanda Folsom**, University of Wisconsin
       Harmonic Maass forms and Borcherds products

12:30pm–2:30pm   **Lunch**

2:30pm   **Chris Brav**, Queen's University
       Braid groups and the McKay correspondence

3:30pm   **Ethan Cotterill**, Queen's University
       Rational curves of degree 11 on a general quintic threefold

4:30pm   **Michael Rose**, University of British Columbia
       Mirror symmetry and ℓ-adic Chen–Ruan cohomology

5:30pm   **Alice Garbagnati**, University of Milano
       Symplectic automorphisms on $K3$ surfaces

7:00m   **Workshop Dinner**

November 4, 2007

9:30am   **Jeng-Daw Yu**, Queen's University
       Unit roots of Calabi–Yau varieties in the Dwork families

10:30am   **Yuri Zarhin**, Pennsylvania State University
       Cubic surfaces and cubic threefolds, jacobians and intermediate jacobians

11:30am   **Vincent Bouchard**, Harvard University, Physics
       Mirror symmetry, matrix models and enumerative geometry

12:30pm   **James Lewis**, University of Alberta
       Cycles on varieties over subfields of the complex numbers

Afternoon **Discussions**