# CLAY MATHEMATICS INSTITUTE

**ON** 

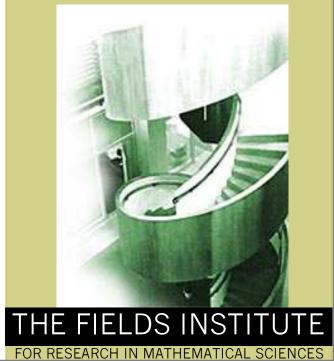
HARMONIC ANALYSIS, THE TRACE FORMULA AND SHIMURA VARIETIES

June 2 - 27, 2003

AT THE

THE FIELDS INSTITUTE FOR RESEARCH IN MATHEMATICAL SCIENCES

222 COLLEGE STEET, TORONTO, CANADA



**SUMMER SCHOOL** 

### SUMMER SCHOOL OVERVIEW

The Clay Mathematics Institute is organizing a summer school in automorphic forms in June, 2003. The school will be held at the Fields Institute in Toronto and will be aimed at graduate students and mathematicians within five years of their Ph.D.

The school will begin with three weeks of foundational courses centered around the trace formula: one course on the statement and proof of the trace formula, two courses providing background material on reductive groups and harmonic analysis on those groups, and a fourth course on Shimura varieties, which provide an illuminating application of the trace formula. The fourth week will consist of five advanced short courses on more specialized topics related to the main themes of the school. While there are no formal prerequisites, preference will be given to applicants with some prior knowledge of algebraic groups or number theory.

#### **ORGANIZING COMMITTEE**

James Arthur (Toronto)
David Ellwood (Boston & CMI)
Robert Kottwitz (Chicago)

#### APPLYING TO ATTEND

Interested participants can apply to attend the summer school by mailing the application form available on the web page to the address below.

We anticipate that funding will be available for 90 graduate students and young mathematicians. Interested candidates must forward with the summer school application available on the web site, a letter of recommendation from their mathematical advisor or a senior mathematician.

Application deadline is February 15, 2003.

Clay Math Institute Summer School The Fields Institute 222 College Street, Toronto, M5T 3J1 Canada Fax: (416) 348-9759

#### SUMMER SCHOOL LECTURE COURSES

June 2 - 20, 2003 Introduction to the Trace Formula Instructor: **James Arthur** 

June 2 - 20, 2003 Introduction to Shimura Varieties Instructor: **James Milne** 

June 2 - 6, 2003 Background from Algebraic Groups Instructor: **Fiona Murnaghan** 

June 9 - 20, 2003 Harmonic Analysis on Reductive Groups and Lie Algebras

Instructor: Robert Kottwitz

## **ADVANCED SHORT COURSES**

June 23-27, 2003

An Introduction to Homogeneity **Stephen DeBacker** 

Geometry and Topology of Compactifications of Modular Varieties **Mark Goresky** 

Bad Reduction of Shimura Varieties **Thomas Haines** 

An Introduction to the Fundamental Lemma **Tom Hales** 

Analytic Aspects of Automorphic Forms
Peter Sarnak

PROGRAM AND APPLICATION INFORMATION

www.fields.utoronto.ca/programs/scientific/02-03/automorphic\_forms/CMI\_summer\_school/www.claymath.org/schools/