

NIMS Summer/Winter School

# Hyperbolic geometry: algorithmic, number theoretic and numerical aspects. (A graduate student workshop)

March 15-19, 2010

KIAS, Seoul, South Korea

Many problems in 3-dimensional topology have been “almost” solved by the recent proof of Thurston’s geometrization conjecture and the Poincare conjecture using the arguments first given by Perelman. However, there are many remaining significant questions in 3-manifolds such as classification problems. These types of problems can be assisted greatly by the use of computations involving number theoretical, algorithmic and numerical methods to compute various invariants. Such a large research project will need many dedicated workers devoting their collected efforts to development of computational tools and so on.

This workshop consists of three main series of lectures by world experts in algorithmic, number theoretic, and numerical aspects of hyperbolic 3-manifold and 3-orbifold theory. They will introduce the theory leading up to recent developments. There will be preliminary lectures by local mathematicians on geometric structures, orbifold theory, and number theory and elliptic curves to prepare for these lectures. The main purpose of the workshop is to introduce these materials to the graduate students and early career mathematicians in Korea.

⌘⌘ **Organizers:** Kihyoung Ko, Jakyoung Koo (KAIST)

⌘⌘ **Scientific Advisor:** Craig Hodgson (University of Melbourne)

⌘⌘ **Local Organizers:** Suhyoung Choi (KAIST), Inkang Kim (KIAS)

⌘⌘ **Invited Main Lecturers:**

Craig Hodgson (University of Melbourne)

Walter Neumann (Columbia University)

Alan Reid (University of Texas at Austin)

⌘⌘ **Session Speakers:**

Hideki Miyachi (Osaka University)

Kenich Ohshika (Osaka University)

Mitsuhiko Takasawa (Tokyo Institute of Technology)

⌘⌘ **Local Lecturers:**

Suhhyun Choi (KAIST)

Suhyoung Choi (KAIST)

Inkang Kim (KIAS)

Kenichi Ohshika (Osaka University)

⌘⌘ **Registration:**

On-line registration

<http://mathsci.kaist.ac.kr/~manifold/hyperbolic.html>

Host Supporter: NIMS.

Supported also by KIAS and KOSEF.

