



Institute of Mathematical Research
HKU



Department of Mathematics
HKUST



Department of Mathematics and IMS
CUHK

Hong Kong Geometry Colloquium
December 3, 2016 (Saturday)
Room 210, Run Run Shaw Bldg., HKU

Professor Kenichi Ohshika

University of Osaka, Japan

Geometry of Kleinian groups

10:00 – 11:00am

In a survey paper published in 1982, Thurston gave a list of 24 questions on Kleinian groups and hyperbolic 3-manifolds, ten of which concern Kleinian groups. During 34 years since then, most of these were resolved. In the first half of the talk, I will explain how these resolutions were obtained, including my own contribution. In the second half, I will focus on one of the remaining problems in the list, which is about the continuity of Cannon-Thurston maps. This part is joint work with Mahan Mj of Tata Institute.

11:00 – 11:20am

Tea Break

Professor José Mourão

Instituto Superior Técnico (IST), University of Lisbon, Portugal

*Complexified Hamiltonian symplectomorphisms and solutions of the homogeneous complex Monge-Ampere equation**

11:20am – 12:20pm

The geodesics for the Mabuchi metric on the space H of Kähler metrics on a compact symplectic manifold correspond to solutions of a homogeneous complex Monge-Ampere (HCMA) equation for the potential of the metric. The space H is an infinite dimensional analogue of the symmetric spaces of noncompact type G_C/G for compact Lie groups G . In H the role of G is being played by the group of Hamiltonian symplectomorphisms. We will describe a method for reducing the relevant Cauchy problem for the HCMA eq with analytic initial data to finding a related Hamiltonian flow followed by a “complexification”. Explicit examples of (infinite dimensional spaces of) new geodesics for the projective line and for elliptic curves will be described.

*Work in collaboration with J.P. Nunes.

This meeting is hosted by the Institute of Mathematical Research, HKU.

All are Welcome