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Hong Kong Geometry Colloquium

Saturday, September 28, 2013
Room 502A, Academic Building No. 1, CUHK

Cosmetic Surgery Conjecture on S^3

by

Professor Zhongtao Wu (CUHK)

at

10:00am - 11:00am

Abstract: It has been known over 40 years that every closed orientable 3-manifold is obtained by surgery on a link in S^3 . However, a complete classification has remained elusive due to the lack of uniqueness of this surgery description. In this talk, we discuss the following uniqueness theorem for Dehn surgery on a nontrivial knot in S^3 . Let K be a knot in S^3 , and let r and r' be two distinct rational numbers with different absolute values, then there is no orientation preserving homeomorphism between the manifolds obtained by performing Dehn surgery of type r and r' , respectively. In particular, this result implies the Knot Complement Theorem of Gordon and Luecke.

B-twisted Sigma-model and Calabi-Yau Geometry

by

Dr. Qin Li (CUHK)

at

11:20am - 12:20pm

Abstract: Let X be a complex manifold. In physics, the quantum field theory of B-twisted sigma model with target X is fully encoded in the neighborhood of constant maps. In this talk, I will describe a rigorous analysis of the perturbative quantum field theory describing maps in the formal neighborhood of constant maps via renormalization method. This is joint work with Si Li.

*There will be a tea break at 11:00-11:20a.m. and lunch at 12:20 – 2:20p.m.

All are Welcome!