Hong Kong Geometry Colloquium
March 30, 2019 (Saturday)
Room 210, Run Run Shaw Bldg., HKU

Professor Sung-Yeon Kim

KIAS, Korea

Subelliptic Multipliers for $\bar{\partial}$-Neumann Problem

10:00 – 11:00am

In 1979, J. J. Kohn proposed an algorithm to produce subelliptic multipliers for the $\bar{\partial}$-Neumann problem. But Kohn's original procedure gives no effective bound on the order of subellipticity in subelliptic estimates. In 2010, Y.-T. Siu obtained a new effective procedure to terminate Kohn's algorithm for so-called special domains. In this talk, we explain Siu's effective algorithm for multipliers as well as Kohn's full radical algorithm and their difference. Then we present a triangular system of multipliers for special domains. We also propose a new class of geometric invariants, called jet vanishing orders, that permits us to obtain a new control of the effectiveness in the Kohn's construction procedure of subelliptic multipliers for the special domains of finite D'Angelo type in $\mathbb{C}^3$.

This is a joint work with D. Zaitsev.

11:00 – 11:20am   *Tea Break*

Professor Huijun Fan

Peking University, China

On Gauged Linear Sigma Model

11:20am – 12:20pm

Gauged linear sigma model was a physical model proposed by E. Witten in the early of 90's, which was used by him to explain the mirror symmetry phenomenon. Only up to recent years has this model been seriously considered by mathematicians with the development of Gromov-Witten theory and quantum singularity theory (FJRW theory). In this talk, I will report our progress on this topic.

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

All are Welcome