



THE HONG KONG UNIVERSITY OF SCIENCE & TECHNOLOGY

Department of Mathematics

SEMINAR ON PURE MATHEMATICS

Castelnuovo Bound and Higher Genus Gromov-Witten Invariants of Quintic 3-fold

by

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Abstract

One of most difficult problems in geometry and physics is to compute higher genus Gromov-Witten (GW) invariants of compact Calabi-Yau 3-folds such as quintic 3-folds. The effort to solve the problem leads to the inventions of several subjects such as mirror symmetry and FJRW theory. Almost twenty years ago, physicist Albrecht Klemm and his group shocked the community to produce explicit predications of higher genus GW invariants up to $g=51$! Their calculation is based on five mathematical conjectures, four BCOV conjectures from B-model and one A-model conjecture called Castelnuovo bound. Several years ago, a spectacular progress has been made to solve four BCOV conjectures. In this talk, I will report the solution of Castelnuovo bound conjecture.

This is a joint work with Zhiyu Liu.

Date : 14 February 2023 (Tuesday)

Time : 2:00pm

Venue : Room 3598 (Lifts 27/28)

All are Welcome!