The Hong Kong University of Science and Technology

Department of Mathematics

PhD THESIS EXAMINATION

Structures of Higher Genus Quantum Singularity Theory via Mixed Spin P-Field Theory

By

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ABSTRACT

We prove a Feynman rule structure for higher genus Fan-Jarvis-Ruan-Witten (FJRW) theory. It reduces the infinity unknown FJRW invariants at each genus to finite unknown ambiguities. As a corollary, we get a polynomial structure of higher genus FJRW potential. The method is to construct a GIT master space of the target, and use torus localization on the master space to get relations among higher genus invariants.

Date : 9 Jul 2025, Wednesday

Time : 3:30 pm

Venue : Room 2504 (Lifts 25/26)

***Thesis Examination Committee*:**

Chairman	**:**	**Prof. Hongbin LIU, OCES/HKUST**
Thesis Supervisor	**:**	**Prof. Huai-Liang CHANG, MATH/HKUST** *(via online mode)*
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(Open to all faculty and students)

The student's thesis is now being displayed on the reception counter in the General Administration Office (Room 3461).