The Hong Kong University of Science and Technology

Department of Mathematics

PhD THESIS EXAMINATION

On the initial condition of MSP algorithm for the Fermat quintic polynomial

By

Mr. Zhiyong WANG

ABSTRACT

Torus localization in Mixed-Spin-P theory for the Fermat quintic polynomial produces an effective algorithm for higher genus Gromov-Witten invariants of quintic threefold. However, the exact value of some initial conditions needed to run the algorithm are still unknown. In this thesis, we conduct further investigation of localization contribution and the algorithm for the Fermat quintic polynomial. We prove that the algorithm is independent of the highest initial condition and then improve the algorithm.

> **Date :** **10 May 2022, Tuesday**
> **Time :** **09:30 a.m.**
> **Venue :** **Online via ZOOM**
> **ID: 675 530 8835**
> **https://hkust.zoom.us/j/6755308835**

Thesis Examination Committee:

Chairman	:	**Prof. Nevin Lianwen ZHANG, CSE/HKUST**
Thesis Supervisors	:	**Prof. Huai-Liang CHANG, MATH/HKUST**
Member	:	**Prof. Guowu MENG, MATH/HKUST**
Member	:	**Prof. Weiping LI, MATH/HKUST**
Member	:	**Prof. Yi WANG, PHYS/HKUST**
External Examiner	:	**Prof. Kwok Wai CHAN, Department of Mathematics/ The Chinese University of Hong Kong**

(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).