



The Hong Kong University of Science and Technology

Department of Mathematics

MPhil THESIS EXAMINATION

**An Approach to Folding Some
Simply-Laced p -Differential Graded KLR Algebras**

By

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ABSTRACT

We show that McNamara's folding of KLR algebras can be applied analogously to some simply-laced p -differential graded (p -DG) KLR algebras resulting in derived triangulated module-categories of compact objects, with induction functors, over a stable module category, where we obtain p -nilpotency of generators in the Grothendieck rings. We then discuss how it may potentially give a categorification of one halves of small quantum groups of non-simply laced types.

Date : 4 August 2025, Monday *

Time : 11:00 am *

Venue : Room 5508 (Lifts 25-26) *

Thesis Examination Committee

Chairman : Prof. Yongchang ZHU, MATH /HKUST

Thesis Supervisor : Prof. Ivan Chi Ho IP, MATH/HKUST

Member : Prof. Quoc HO, MATH/HKUST

(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).