



THE HONG KONG UNIVERSITY OF SCIENCE & TECHNOLOGY

**Department of Mathematics**

**PhD Student Seminar**

# **Greedy Basis and Its Quantum Lift**

**By**

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**Abstract**

In the theory of cluster algebras, the research has been directed towards various constructions of “natural” bases in them. Sherman and Zelevinsky have shown that the indecomposable positive elements form an integer basis in any rank 2 cluster algebra of finite or affine type. But in wild type, the indecomposable elements of cluster algebra are not linearly independent. The greedy basis is a subset of indecomposable elements which admits a beautiful combinatorial description. We also establish the existence of a quantum lift of the greedy basis for quantum cluster algebras and present several conjectures related to this quantum greedy basis.

**Date : 3 May 2023 (Wednesday)**

**Time : 3:00pm**

**Venue : Room 4475 (Lifts 25/26)**

*All are Welcome!*