



XIAMEN UNIVERSITY MALAYSIA

廈門大學 馬來西亞分校

Research Talk

FROM HOMOLOGICAL ALGEBRA TO TOPOLOGY

November 21, 2022 (Monday), 3:30–4:30 pm Room A4#104



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Research interests: Homological algebra, symplectic geometric and symplectic topology.

SPEAKER INTRODUCTION

Dr. Nge Kie Seng is an Assistant Professor at the School of Mathematics and Physics in Xiamen University Malaysia. Dr. Nge Kie Seng was graduated from Australian National University under the supervision of Anthony Licata in 2022.

ABSTRACT

Braid group actions are pervasive in the discipline of Mathematics and Physics. In particular, Khovanov-Seidel exploits the homological algebra tools to prove faithful categorical representation of braid group producing new results for braid group action in topology and symplectic geometry. On the other hand, Vaughan Jones introduced a new knot invariant, namely the Jones polynomial through the incarnation of representations of Temperley-Lieb algebra as the representations of braid group. In this talk, I will explain one generalization of Khovanov-Seidel work to a non-simply-laced braid group action and if possible, a possible 2-categorification of Jones polynomial using a representation of braid group coming from categorical representation of Heisenberg algebra. Intermittent interruptions are welcome during the talk; I wish to attract those who are working in relevant areas (e.g. representation theory, algebraic geometry, symplectic geometry, combinatorics, number theory and so on) or interested in my work to give useful inputs and collaborate on possible projects.