



THE HONG KONG UNIVERSITY OF SCIENCE & TECHNOLOGY

Department of Mathematics

ALGEBRA AND GEOMETRY SEMINAR

MOMENT MAP AND CONVEX FUNCTION

by

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Abstract

The concept moment map plays a central role in the study of Hamiltonian actions of compact Lie groups K on symplectic manifolds (Z, ω) . In this talk, we propose a theory of moment maps coupled with an Ad_K -invariant convex function f on \mathfrak{k}^* , the dual of Lie algebra of K , and study the structure of the stabilizer of the critical point of $f \circ \mu$ with moment map $\mu : Z \rightarrow \mathfrak{k}^*$. As an outcome, we are able to obtain a Calabi-Matsushima decomposition in this new framework. This work is motivated by the work of Donaldson on Ding functional, which is an example of infinite dimensional version of our setting. In particular, we obtain a natural interpretation of Tian-Zhu's generalized Futaki-invariant and Calabi-decomposition.

Date : 31 January 2024 (Wednesday)

Time : 4:30pm

Venue : Room 4472 (Lifts 25/26)

All are Welcome!