Mini-workshop on Higgs bundles

Date: 27th-28th May 2024. (2024 年 5 月 27–28 日)
Place: Lecture Room E404 in Graduate School of Science Building E in Osaka University (Toyonaka Campus). (大阪大学理学部 E404 講義室 (豊中キャンパス))

Program

27th May (Monday)

10:00–11:00 Laura Schaposnik (University of Illinois)
An introduction to Higgs bundles and their integrable system I

11:30–12:30 Laura Schaposnik (University of Illinois)
An introduction to Higgs bundles and their integrable system II

14:30–15:30 Natsuo Miyatake (Mathematical Science Center for Co-creative Society, Tohoku University)

16:00–17:00 Mengxue Yang (Kavli IPMU, The University of Tokyo)

28th May (Tuesday)

10:00–11:00 Laura Schaposnik (University of Illinois)
An introduction to Higgs bundles and their integrable system III

Information

This workshop will be held as a pre-seminar for our conference "New developments in Kobayashi-Hitchin correspondence and Higgs bundles" from 5th-9th August 2024 in Osaka Metropolitan University.

Organizers

- Yoshinori Hashimoto (Osaka Metropolitan University)
- Masataka Iwai (Osaka University)
- Hisashi Kasuya (Osaka University)
- Natsuo Miyatake (Mathematical Science Center for Co-creative Society, Tohoku University,)

Supports

- JSPS KAKENHI 19H01787 Grant-in-Aid for Scientific Research (B)
- JSPS KAKENHI 24K16912 Grant-in-Aid for Early Career Scientists.

Abstract

Laura Schaposnik (University of Illinois)
An introduction to Higgs bundles and their integrable system.

During the mini-course we will introduce Higgs bundles and their integrable system by first considering the basic definitions, and slowly introducing the Hitchin fibration. We will then look at the Hitchin fibration for different groups and see how dualities arise (be them from mirror symmetry, or from other correspondences such as low rank isogenies). Finally, we will dedicate the last talk to the introduction of some particular Lagrangians in the moduli space of Higgs bundles giving branes, whose understanding can lead to insights in representation theory (about representations of 3-manifolds, equivariant representations, etc).

Natsuo Miyatake (Mathematical Science Center for Co-creative Society, Tohoku University)

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Mengxue Yang (Kavli IPMU, The University of Tokyo)

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