MATH-536

Representation theory III - infinite dim. algebras

Negut Andrei

Cursus	Sem.	Type
Ing.-math	MA2, MA4	Opt.
Mathématicien	MA2	Opt.

Language of teaching	English
Credits	5
Session	Summer
Semester	Spring
Exam	During the semester
Workload	150h
Weeks	14
Hours	**4 weekly**
Courses	2 weekly
Exercises	2 weekly
Number of positions	

Remark

Cours donnés en alternance tous les deux ans

Summary

This course serves as an introduction to the theory of infinite-dimensional Lie algebras.

Content

This is a third semester course in representation theory, which succeeds the theory of semisimple Lie algebras. We will cover Kac-Moody Lie algebras (with special emphasis on affine Lie algebras), but also the Heisenberg and Virasoro Lie algebras that are important in mathematical physics.

Keywords

Kac-Moody Lie algebras, affine Lie algebras, Heisenberg and Virasoro Lie algebras

Learning Prerequisites

Required courses

MATH-429 Representation theory II - Lie algebras

Learning Outcomes

By the end of the course, the student must be able to:

- Formulate the main concepts and theorems defined in the course
- Theorize the role of quantum groups in the theory
- Compute characters of affine Lie algebras

Expected student activities

Students are expected to attend all lectures, read all lecture notes and participate in all problem sessions

Assessment methods

Graded homework throughout the semester

Supervision

Office hours	No
Assistant.e.s	Yes
Forum	Yes

Resources

Bibliography

V. Kac, "Infinite Dimensional Lie algebras"

Moodle Link

- https://go.epfl.ch/MATH-536