Vertex algebras, instanton counting and invariants of 3 and 4 dimensional manifolds
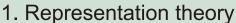
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July 22 – 26, 2019

Monday, July 22	13:30 – 15:30
Tuesday, July 23	10:00 – 12:00
Wednesday, July 24	10:00 – 12:00
Thursday, July 25	13:30 – 15:30
Friday, July 26	13:30 – 15:30

127 Conference Room
Faculty of Science Bldg. #3,
Kyoto University

1. Representation theory
    Affine Kac–Moody algebras
    Integrable representations Characters formulas
    Two ways to understand characters — geometric and combinatorial
    Lefschetz fix points formula and Brion theorem

2. Vertex opetator algebras and conformal fields theories
    Characters of representations of vertex algebras
    Simplest case — minimal models for Virasoro algebra
    Conformal blocks and modular functor
    Consructions of vertex algebras by reduction or by exstensions

3. Elements of geometric representation theory
    Vertex algebras and invariants of 4-dimensional manifolds
    Instanton counting

4. 3-dimensional manifolds and logarithmic theories
    Invariants of 3-dimensional manifolds

❖ 本講義は「スーパーグローバルコース数学特別講義２」として、大学院の学生には１単位認定されます。

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https://ktgu.math.kyoto-u.ac.jp/