**CHAMPP**
CENTER IN HAMBURG
FOR ASTRO, MATHEMATICAL
AND PARTICLE PHYSICS

Universität Hamburg
DER FORSCHUNG I DER LEHRE I DER BILDUNG

## LECTURE COURSE IN THE CHAMPP GRADUATE SCHOOL

**Winter Term 2018/2019**

# Introduction to Conformal Field Theory

## J. Teschner

**Course Description:**

In a combination of lectures and seminars prepared by the participants we will offer an introduction to conformal field theory for master's students in mathematical physics and other interested students of mathematics and physics. Topics will include
 (1) Vertex operator algebras and their representations
 (2) The definition and basic properties of conformal blocks
 (3) Examples: Minimal models, WZW-models.

**Prerequisites:**

Basic knowledge of Lie algebra theory. (Knowledge of basic notions of Riemann surface theory may be helpful, but is not required.)

**Literature:**

The main references will be
 • Kac, Victor: Vertex algebras for beginners. University Lecture Series, 10. American Mathematical Society, Providence, RI, 1998.
 • (Selected chapters of:) Frenkel, Edward; Ben-Zvi, David: Vertex algebras and algebraic curves. Mathematical Surveys and Monographs, 88. American Mathematical Society, Providence, RI, 2004.
 • Teschner, Jörg: A guide to two-dimensional conformal field theory arXiv:1708.00680

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| **Date and Place:** | Mon, 14:15 – 15:45, Hörsaal H5, Geomatikum |
| | Fri, 12:15 – 13:45, Hörsaal H6, Geomatikum |
| **Problem Classes:** | Mon, 12:15 – 13:45, SR 434, Geomatikum |
| | Starting on: 15 October 2018 |
| **Starting on:** | 22 October 2018 |