



**UNIVERSITÄT  
BIELEFELD**

Fakultät für Physik

**Sven Möller**  
Universität Hamburg

# Vertex Algebras for 2- and 4-Dimensional Conformal Field Theories

Vertex (operator) algebras axiomatise 2-dimensional conformal field theories in physics. They were introduced in the 1980s to explain mysterious connections between number and representation theory (monstrous moonshine). Not long ago, they were also shown to capture certain aspects of 4-dimensional superconformal field theories.

In this talk I will describe recent classification results for holomorphic vertex algebras of central charge 24 by means of certain modular forms (vector-valued Eisenstein series). Moreover, I will sketch classification problems arising in the context of 4-dimensional field theories.

**Friday,  
01 July 2022,  
16:15 in D5-153  
[www.physik.uni-bielefeld.de](http://www.physik.uni-bielefeld.de)**