universitätbonn

bctp Bethe Center for Theoretical Physics

# Bethe Forum

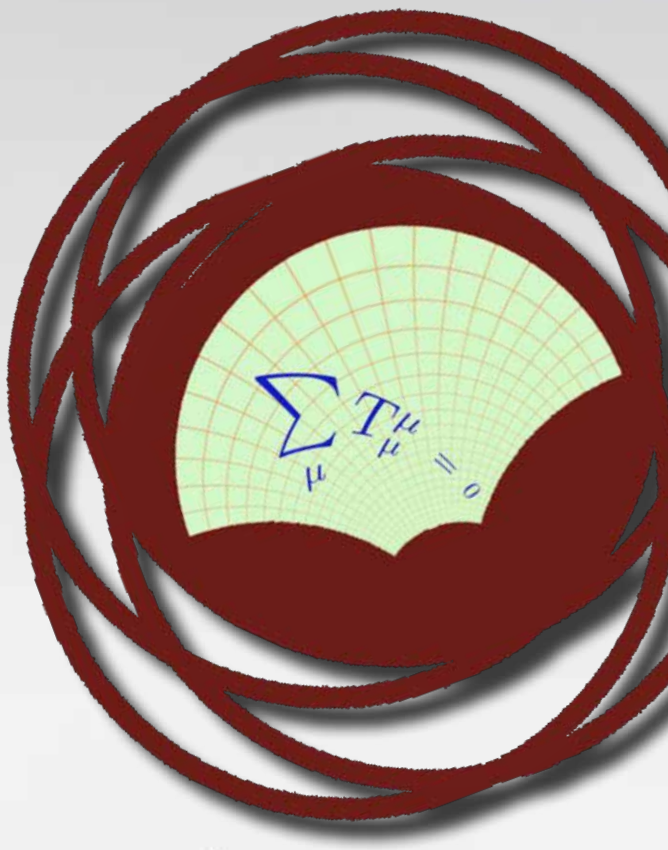
# Lecture Series on Conformal Field Theories, Trace Anomalies and Their Applications

## 3rd to 7th July, 2017 - Bonn, Germany

**Stefan Theisen**
Max Planck Institute for Gravitational Physics, Potsdam, Germany

**Abstract**

I will introduce general properties of conformal (quantum) field theories in arbitrary dimensions. In even dimensions, the symmetry is anomalous, giving rise to a conformal or Weyl anomaly. This will be studied in both the unbroken and the spontaneously broken phase. Using anomaly matching leads to a proof of the a-theorem in four dimensions.
Conformal field theories often have moduli, i.e. exactly marginal deformations. In their presence new anomalies arise and they can be used, in the favourable case of sufficient supersymmetry, to constrain the sphere partition function in terms of geometric data of the so-called conformal manifold.




Bethe Center for Theoretical Physics
Physikalisches Institut
Universität Bonn
Nussallee 12
53115 Bonn
Phone: (+49) 228 / 73 3432
e-mail: theory@physik.uni-bonn.de
http://bctp.uni-bonn.de

**Additional information and application form:**

**http://bctp.uni-bonn.de/bethe-forum/2017/conformal**