



Lecture Course in the Integrated Research Training Group (IRTG)  
of the SFB 676 "Particles, Strings and the Early Universe"

Summer Term 15

# Introduction to Anomalies in Quantum Field Theories

Jan Louis

## Course Description:

The course offers an introduction to Anomalies in Quantum Field Theories. Concretely the following topics are covered:

- Perturbative calculation of chiral anomalies
- Wess-Zumino consistency condition and decent equations
- Application to effective chiral theories  
(*'t* Hooft anomaly matching, Wess-Zumino term)
- Anomalies in the path integral formalism
- Anomalies and index theorems
- Gravitational anomalies
- Anomalies in arbitrary space-time dimensions
- Conformal anomalies and  $a$ ,  $c$ -theorems

## Prerequisites:

Basic knowledge in quantum field theory.

## Date and Place:

Do, 09:15, SR 2/2a, Bldg. 2a, Campus Bahrenfeld

## Starting on:

2 April 2015

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