Universität Hamburg
DER FORSCHUNG | DER LEHRE | DER BILDUNG

CHAMPP
CENTER IN HAMBURG
FOR ASTRO, MATHEMATICAL
AND PARTICLE PHYSICS

**LECTURE COURSE IN THE CHAMPP GRADUATE SCHOOL**

**Winter Term 2018/2019**

# Phenomenology of Physics Beyond the Standard Model

**K. Schmidt-Hoberg, G. Weiglein**

**Course Description:**

This lecture covers the following topics:

- Shortcomings of the Standard Model (SM), hierarchy problem and further motivations for physics beyond the SM (BSM)
- BSM physics: specific models versus effective field theories
- Precision tests of the electroweak and strong interactions
- Properties of supersymmetric theories
- Electroweak symmetry breaking
- Examples for BSM phenomenology at the LHC and beyond
- Axions
- Dark Matter: candidates, indirect and direct searches

**Prerequisites:**

Basic knowledge in Quantum Field Theory or Advanced Particle Physics

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|---|---|
| **Date and Place:** | Mon, 9:15 – 10:45, SR 2, Building 2a, Bahrenfeld<br>Thu, 9:15 – 10:00, SR 2, Building 2a, Bahrenfeld |
| **Problem Classes:** | Thu, 10:00 – 10:45, SR 2, Building 2a, Bahrenfeld |
| **Starting on:** | 18 October 2018 |