

Announcement for Winter Term 2024/25

Lectures and Exercises

Beyond the Standard Model

Prof. Dr. Thorsten Feldmann, Dr. Tom Tong, Dennis Horstmann

Unisono: 4PHYMA42.1 (*Erweiterungen des Standardmodells*)

Your deepest questions about the universe will be explored here — or at least I'll try! While the Standard Model has achieved tremendous success, many unknowns and mysteries remain, such as the nature of dark matter and dark energy, the origin of neutrino masses, and the asymmetry between matter and antimatter. Join us this semester for an exhilarating journey into theories and discoveries that transcend our current understanding of the cosmos.



- Simple extensions of the Standard Model
 - Standard Model Effective Field Theory (SMEFT)
 - Dark matter models and phenomenology
 - Supersymmetry (SUSY) and naturalness
 - BSM in the Higgs sector
 - Baryogenesis and Leptogenesis
 - Grand Unified Theory (GUT)
 - Planck scale and Extra Dimensions
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Lectures:

Wednesday: 14:00 – 16:00, starting 09.10.2024, Room ENC-D 115

Exercises:

Friday: 12:00 – 14:00, starting 11.10.2024, Room ENC-D 115

This course is designed for advanced students eager to explore the frontiers of particle physics. Students are expected to have a basic understanding of Quantum Field Theory and the Standard Model — since we have to go beyond!