Universität Hamburg
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CHAMPP
CENTER IN HAMBURG FOR ASTRO-, MATHEMATICAL AND PARTICLE PHYSICS

LECTURE COURSE IN THE QUANTUM UNIVERSE RESEARCH SCHOOL

Summer Term 2021

Physics of the Standard Model

Kerstin Tackmann and Frank Tackmann

Course Description:

Topics:

- Standard Model processes at lepton and hadron colliders
- electromagnetic interactions (QED)
- strong interactions (QCD)
- electroweak interactions
- electroweak symmetry breaking
- flavor physics
- Higgs physics
- neutrino physics (if time permits)

Prerequisites:

Introductory course on particle physics (Physics 5). Basic knowledge of quantum field theory will be helpful but is not required.

Literature:

Complementary reading suggestions:

- Peskin, Schroeder: *Introduction to QFT*
- Griffiths: *Introduction to Elementary Particles*
- Goldhaber, Cahn: *The Experimental Foundations of Particle Physics* (2nd edition)

Date and Place: Mon 11:15–12:45, Thu 12:00–13:30, Zoom
Zoom coordinates will be available on the Moodle course webpage

Problem Classes: will be flexibly integrated into the lecture times

Starting on: 8 April 2021