

SUMMER STUDENT LECTURE PROGRAMME 2022

Lecture Title

The Standard Model

Lecturer's name

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Short CV

1999: PhD in Saclay/Orsay (France)
1999-2001: Postdoc UC Berkeley
2001-2006: Permanent staff scientist, CEA Saclay
2006-2012: Junior staff scientist CERN-TH
2013-2014: Research professor, Barcelona
2015-now: Leading scientist, DESY, Hamburg
2016-now: Professor, Humboldt U., Berlin

Lecture Content

1. Dimensional analysis: cross-sections and lifetimes
2. Gauge interactions: electromagnetism, weak interactions, quantum chromodynamics
3. Chirality of the weak interactions. Pion decay
4. Higgs mechanism
5. Running couplings and anomaly cancelation

Pre-requisites:
earlier series of lectures
that the students
should follow

Some notions of classical and quantum mechanics
will be helpful

Other pre-requisites:

The lectures will build upon what will be taught in the
lectures "Particle World" by D. Tong and "Theoretical
Concepts" by T. Cohen