

# ÜBERSICHT

## Phänomenologie

- Vermessung des Higgs-Bosons am LHC
- Collider-Suchen nach Dunkler Materie
- Verletzung der CP-Symmetrie
- Mini-Schwarze Löcher am LHC

## Experiment

- Detektortechnologie am Hi-Lumi LHC
- Physik am SuperKEKB Beschleuniger
- Das ALPHA Antimaterie-Experiment
- Neuronale Netze in der Teilchenphysik

## Theorie

- Anomalien in der QFT
- Geister in der QCD
- [Spontane Symmetriebrechung](#)
- Laufende Kopplungen

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- Quantum field theory on curved space-time (Parker)
- The Unruh-Effect (chapt.2)
- Warped Extra Dimensions and the Hierarchy Problem (Randall, Sundrum)
- Color-Kinematics Duality (C. Cheung TASI lectures, chapt. 6)
- SM EFT (Part II of Higgs Yellow Report 4)
- Spherical Harmonics for multi-parton final states
- Altarelli (The Higgs and the Excessive Success of the Standard Model)
- Color ordering at 2-loops
- Instantons (Shifman), Sphalerons (A saddle-point solution in the Weinberg-Salam Theory)
- Power corrections (On the universality of the leading,  $1/Q$  power corrections in QCD)
- Amplitudes in coordinate space (Erdogan, Sterman)
- Primordial Black Holes as Dark Matter
- Light bound states of heavy fermions (Shuryak)
- Differential Higgs production at N3LO beyond threshold