

Belle II

Subtitle of Presentation

This image is a place-holder for the respective program - image

Helmholtz Program: Matter and the Universe (MU)

PoF III Topic: Fundamental Particles and Forces

DESY Research Unit: Experimental Particle Physics

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HELMHOLTZ
RESEARCH FOR GRAND CHALLENGES



Outline

- Introduction & past activities
 - Belle II, SuperKEKB, German groups
 - Motivation: anomalies in flavor sector, lumi projection, competition & complementarity with LHCb
 - Pixel detector & DESY's unique role:
 - integration & commissioning of VXD: testbeam, cooling, RVC, field measurement, (computing)
 - Phase 2 status
 - Physics (with Belle data): $b \rightarrow sll$ (P^*5 , R_K^* , $K\tau\tau$)
- Future/outlook:
 - PXD phase 3 commissioning (PERSY/Helmholtz detector lab)
 - Software: tracking & alignment, ECL reconstruction, PYTHIA tuning
 - Analyses with Belle II data: test of LFU ($b \rightarrow sll$, $s\nu\nu$), inclusive ($B \rightarrow X_s \gamma$, $X_u l \nu$ and global fits), DM, LFV
 - Mention new groups: YIG, W3, ERC proposal and close contacts to local theory (Schmidt-Hoberg, Tackmann, Grojean)