

## **PD7: Callorimetry/Muon Systems (2 talks)**

### **Potential and challenges of the very forward detectors in physics measurements at a future linear collider**

Speaker: Strahinja LUKIC

The very forward region of a detector at a future linear collider will be instrumented with the two finely granulated calorimeters - BeamCal and LumiCal - for the fast beam parameter estimate, precise luminosity measurement, as well as for the improvement of hermeticity at the small angles. These calorimeters are designed to sustain high radiation doses and to deliver precise and valuable data for machine- and physics-related measurements. However, the analysis of these data has to face challenges due to the high beam energy and instantaneous luminosity. In this talk the challenges for luminosity measurement as well as for the low-angle particle identification will be discussed, and some of the solutions will be presented.

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### **Status of the W-DHCAL test beam analysis: Calibration and Digitisation**

Speaker: Christian GREFE

The CALICE digital HCAL prototype using 54 RPC layers as active elements was tested at the CERN PS and SPS beam lines together with tungsten absorber plates in 2012, covering beam momenta from 1 GeV up to 300 GeV. We present the current status of the on-going data analysis, focusing on the calibration of the test beam data, which is required to normalise the response of the different RPC modules over the full data set. In particular we present a new local calibration scheme that corrects for RPC inefficiencies limited to the central part of the modules. These inefficiencies were not observed in the data taken previously with these RPCs together with the steel absorber. We discuss the origin of the inefficiencies and assess the impact of the different calibration schemes on the overall data quality. Furthermore we present recent developments in the digitisation software, which simulates the RPC response starting from Geant4 simulations that only simulate the fundamental energy deposits in the gas volume.