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Luminosity Monitor and Forward Region at FCC-ee

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The very high luminosity reach of the FCC-ee is obtained by having separate storage rings for electrons and positrons, which cross at a +/- 15 mrad angle at the interaction points, and by strong focussing obtained via by a set of quadrupoles the last of which has it face at L*=2.2 m from the IP. The crossing of the beam lines by the detector solenoidal field necessitates the insertion of a set of compensating solenoidal magnets in front of the quadrupoles pushing the luminosity monitors far into the detector volume at about 1 m from the IP, where space is severely limited. To exploit the enormous FCC-ee statistics, systematic precisions will have to be minimised. For the absolute luminosity measurement an ambitious goal of 10⁻⁴ has been defined. A conceptual luminometer design has been defined primarily focussing on the necessary geometrical tolerances a the micron level. Extensive development work is needed in order to integrate this design into the challenging machine detector interface region and to optimise the design also with the focus on the overall detector hermeticity.

Time Zone

Presenter: DAM, Mogens (University of Copenhagen (DK)) **Session Classification:** PD6: Calorimeters

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