DD4HEP validation for LumiCal

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Simulated response of the LumiCal has been compared using **Mokka** and **ddsim**.

- Sample of single electrons : E = 250 GeV, $\Theta = 0.045 \text{ rad}$ Uniform φ (0-360 deg) • Detector model: **ILD_o1_v05** (LumiCal at $z_{BEG} = 2500 \text{ mm}$
- Ilcsoft version : v01-17-10

Number of Hits

MOKKA

DDSIM



Total Energy Deposit

MOKKA

DDSIM



Max Energy Deposit per Lcal Cell

MOKKA

DDSIM



Energy of hit Distribution

MOKKA

DDSIM



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Azimutal Hits Distribution

MOKKA

DDSIM



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Summary

- Results obtained for simulation of LumiCal response with Mokka and DDSIM (DD4HEP model) do not compare (are different) for ILD_01_v05 model
- Problems:
 - max energy deposit per cell higher for DD4HEP model
 - number of hits recorded higher for in ddsim
 - different positions/size of tile gaps (seen in azimuthal distribution)
- Presumably implementation of LumiCal geometry and/or materials is the cause and must be checked/fixed