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## Geant4 quartz fiber simulations as part of luminometer development for CMS

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For the new upcoming era of LHC with higher energies and a more complex structure of the beam (HL-LHC) measurements of luminosity are required to be exceedingly accurate. A new device is being developed for CMS experiment to fulfill such demands as stand-alone, robust and precise. The design, main components and physics behind the new quartz fiber based luminometer (QFL) are described. Simulations of the main component of the detector – a single quartz fiber – are demonstrated. The results of the simulations are compared with experimental data, gathered using a setup build in MEPH.

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