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Tests of scintillator tiles for the technological prototype of highly granular hadron calorimeter

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The CALICE collaboration is developing a new technological prototype of a highly granular hadron calorimeter for future collider experiments. The proposed baseline design of the active elements considers scintillator tiles with a silicon photomultiplier readout. The light yield and uniformity of response of new tiles from different producers were measured. The technology proposed for the ILD detector was used: the SiPm was coupled directly to the dimpled scintillator tile and each tile was individually wrapped in the reflecting foil. The experimental results are compared with simulations, which use the optical photon transport functionality available in the Geant4 package.

Primary author(s) : Mr. KORPACHEV, Sergey (MEPhI)

Co-author(s) : BOBCHENKO, B. (ITEP); TARKOVSKII, E. (ITEP); Dr. CHADEEVA, Marina (ITEP, MEPhI); RUSINOV, V. (ITEP)

Presenter(s) : Mr. KORPACHEV, Sergey (MEPhI)

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