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Timing Resolution in Aligned PWO Crystal Scintillators

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Evaluation of crystal effects in the PWO scintillator of the CMS electromagnetic calorimeter showed that the peak of the electromagnetic shower shifts by 2-4 radiation lengths to its entry surface [1]. Shower development acceleration also affects timing resolution of a crystal calorimeter. In current study we used the similar approach like in [1], in order to get in-depth understanding of PWO timing performance. In contribution we will present timing evolution of the electromagnetic showers in “crystal”PWO in comparison with showers in the “amorphous”PWO.

1. V. Baryshevsky et al., Nucl. Instr. Meth. B 402 (2017) 35.

Primary author: Prof. LOBKO, Alexander (Institute for Nuclear Problems, Belarusian State University)

Co-authors: Ms LEUKOVICH, Alesia (Institute for Nuclear Problems, Belarusian State University); Prof. TIKHOMIROV, Victor (Institute for Nuclear Problems, Belarusian State University); Mr HAURYLAVETS, Viktor (Institute for Nuclear Problems, Belarusian State University)

Presenter: Prof. LOBKO, Alexander (Institute for Nuclear Problems, Belarusian State University)

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