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Timing resolution on a 3D silicon pixel detector

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We report on the measurements of time resolution for double-sided 3D pixel sensors with a single cell of 50 μm $\times$ 50 μm and thickness of 285 μm, fabricated at IMB-CNM and irradiated with reactor neutrons to 8e14 MeV n_{eq}/cm^2 and then to 2.3e15 MeV n_{eq}/cm^2. Measurements were conducted using a radioactive source at a temperature of -20 and 20 \textdegree C in a bias voltage range of 50-300 V. The reference time was provided by an LGAD detector produced by Hamamatsu.
In order to reduce the effect on jitter a detector has been produced and tested with the same technology but with a thickness of 235 μm. The results obtained are compared to measurements conducted prior to irradiation.

Authors: DE SIMONE, Dario (Universitaet Zuerich (CH)); BETANCOURT, Christopher (Universitaet Zuerich (CH))

Co-authors: KRAMBERGER, Gregor (Jozef Stefan Institute (SI)); MANNA, Maria (Centro National de Microelectronica - CNM-IMB-CSIC); SERRA, Nicola (Universitaet Zuerich (CH)); Dr PELLEGRINI, Giulio (Centro Nacional de Microelectrónica (IMB-CNM-CSIC) (ES))

Presenter: DE SIMONE, Dario (Universitaet Zuerich (CH))

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