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## Characterization with a $\beta$ -source setup of the FBK UFSD 3.2 & HPK2 LGAD productions

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In this contribution, I will present the characterization of the latest LGAD productions manufactured at FBK (UFSD3.2) and HPK (HPK2), performed with the  $\beta$ -source (Sr90) setup of the Torino Silicon Lab (INFN – University of Torino). In particular, I will focus on temporal resolution and gain measurements of either irradiated (up to a fluence of  $2.5E15$  neq/cm<sup>2</sup>) and non-irradiated devices. Results on sensors with different gain layer depths and carbon implantation doses will be shown.

In addition, I will compare the performances of FBK UFSD3.2 sensors with four different active thicknesses (25, 35, 45, 55  $\mu$ m).

I will also discuss the issues faced during the development of a dry and cold ( $-30^{\circ}\text{C}$ ) setup and provide some informations on the Torino  $\beta$ -setup, both on the hardware and software side.

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