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TCT simulations of synthetic diamonds using Allpix squared

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We have been validating the implementation of the diamond as a sensor material in Allpix Squared using the TCT approach. The transient current technique (TCT) is a powerful technique for investigating the charge carrier properties of a sensor material. Low field mobility parameters were extracted from the RD42 test beam data. TCT signals were simulated both for single and polycrystalline synthetic diamonds. A trapping model for grain boundaries of pcCVD diamond was implemented. This model assumes pcCVD diamonds as pre-irradiated scCVD (RD42, 2018). Simulation results are in agreement with the experimental results. I will present the simulation results and their comparison with the experimental results for single and polycrystalline CVD diamonds.

RD42, L. B. (2018). Diamond Detectors for high energy physics experiments. JINST 13 C01029.

Will the talk be given in person or remotely?

In person

Author: Mr ISHAQZAI, Faiz (TU Dortmund, DEU Izmir)

Co-authors: BISANZ, Tobias (Technische Universitaet Dortmund (DE)); WEINGARTEN, Jens (Technische Universitaet Dortmund (DE))

Presenter: Mr ISHAQZAI, Faiz (TU Dortmund, DEU Izmir)

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