

## Very thin LGAD for tracking particles at fluences above $5E15$ n/cm<sup>2</sup>

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In this contribution, we explore the possibility of using very thin LGAD ( $\sim 20$  microns thick) as tracking detector at very high fluences. Current silicon detectors generate signals at most of 1-2 fC: we believe that very thin LGAD can provide signals of this magnitude via the interplay of gain in the gain layer and gain in the bulk.

Up to fluences of  $1-2E15$  n/cm<sup>2</sup>, thin LGAD still have a gain of  $\sim 10$  while at higher fluences the increased bias voltage will trigger the onset of multiplication on the bulk.

Key to this idea is the possibility of a reliable, high-density LGAD design able to hold large bias voltages ( $\sim 500V$ )

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