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## Characterisation of the charge collection in LGAD sensors with a newly developed table-top TPA-TCT system

The Two Photon Absorption –Transient Current Technique (TPA-TCT) uses fs-pulsed infrared lasers, with photon energies below the silicon band gap. Excess charge carriers are generated mainly in a small volume (approximately  $1\mu\text{m} \times 1\mu\text{m} \times 20\mu\text{m}$ ) around the focal point of the laser beam, enabling a resolution in all three spatial directions. Compared to conventional Single Photon Absorption –TCT, the resolution perpendicular to the incident laser beam is typically increased by a factor of ten. Following the initial success of the method, a compact TPA-TCT setup was developed at CERN. The TPA-TCT setup and various measurements with the focus on the charge collection and the gain suppression in LGAD sensors will be presented.

### Primary experiment

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