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## Thick-GEM production in Brazil - characterization of the first prototype

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Thick Gas Electron Multipliers (THGEMs) are based on the GEM microstructure, with thickness, pitch and hole diameter enlarged by a factor 10. The substrate is a common copper clad 0.5 mm thick FR4 or G10 board for printed circuits, with 0.5mm diameter holes mechanically drilled at a pitch of 1mm. Although it relies on a much simpler technological process to be fabricated, a precision of few micrometers in the position and shape of the holes is required to achieve gains and stability similar or close to the standard GEM. THGEMs are more robust to electrical discharges when compared to the standard GEMs giving an advantage in cases where the detector must operate at a higher gain.

The availability of MPPGD detectors for R&D in laboratories without production infrastructure is a real problem and poses a great challenge when developing new ideas. In this work, the development of independent production of THGEMs is described and the characterization of the first working prototypes is shown. Maximum gain curves for single and double stages, energy resolution, collection and extraction efficiencies as a function of the hole pitch and performance as a function of time will be presented, introducing a new solution for supplying THGEMs to the MPPGD community.

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