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## **New GEM Detectors for Tracking and Triggering**

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Since its introduction in 1996 GEM (Gas Electron Multiplier) has attracted a lot of interest due to many promising features: good position accuracy and two track resolution, high rate capability, high radiation tolerance and time stability, large flexibility of the geometrical shapes and readout schemes. This has led to a wide range of applications from simple tracking and triggering through photon detection for fast RICH to GEMbased TPC. CERN was one of the main drivers behind these developments. In parallel to the success of GEM in physics experiments industrial partners became aware of their potential for applications in medicine, biology and safety technology. In this paper we show latest CERN developments of the new GEM detector configurations and readout structures. In particular we present detector developed for TOTEM using specific readout electrode allowing for precise tracking and fast triggering at the same time. As another example we present semi cylindrical detector developed for NA49-future experiment. Laboratory and beam test results illustrate detector performances.

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