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The design of the electronics system for small array GEM

Because of the advantage of GEM(Gas Electron Multiplier), such as high count rate, good time resolution, good position resolution, and adjustable of gain, this kind of detector have been used in many experiments of physics.

In this presentation, the R&D of the readout electronics system for a GEM with 30x30 pads will be introduced. To reduce complexity, the work of acquiring signals is done in the ASIC of capacitor-switch array and ADC. And all the calculation for the position is finished in one single FPGA.

Another point is the connection between the electronics and the detector. For the mass pad readout system, it is full of challenge. For our system, it is the difficult part of all.

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