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Thin-gap RPC Test Results

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A joint effort from China, Italy and US institutes and laboratories on thin-gap RPC development for high rate capability, excellent time precision and good spatial resolution will be reported with test beam results. The performance of several prototype RPCs which have 1 mm gas gaps and 1-3 mm readout strip sizes will be addressed. Tests at backgrounds as high as 7KHz/cm² will be discussed.

High rate capability, high efficiency, and low noise are demonstrated in the test beam results. The small cluster sizes observed in the data indicate sub-mm spatial resolution is available. The mean-timer readout from both sides of the strips shows that high precision timing can be achieved using RPCs; it also provides a most robust and effective means to reject beam background in the super-LHC high luminosity environment.

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