



Contribution ID: 77

Type: **Poster contribution**

Development of a new front-end electronics in Si and SiGe technology for the Resistive Plate Chamber (RPC) detector for high rate experiments

Friday, 21 April 2017 17:00 (1 hour)

The Resistive Plate Chamber (RPC) detector front-end for high rate experiments is being developed. A mixed technology in Silicon and Silicon-Germanium is used in order to enhance its performances: a preamplifier in Silicon with a very low inner noise (1000 e⁻ rms) and a new kind of discriminator in SiGe technology with a threshold of the order of 1 mV. The main feature of this new kind of front-end is the great ability to discriminate the signal from the noise with a minimum threshold of few femtoCoulomb. In this presentation the results of the simulation and the tests of the front-end will be shown, and the advantages and the huge rate capability gain that the RPC detector can achieve with this new front-end is discussed.

Primary author: PIZZIMENTO, Luca (R)

Co-authors: CALTABIANO, Alessandro (ROMA2); ROCCHI, Alessandro (ROMA2); CARDARELLI, Roberto (ROMA2); BRUNO, Salvatore (ROMA2)

Presenter: PIZZIMENTO, Luca (R)

Session Classification: Archivio Poster

Track Classification: Sessione Nuove Tecnologie