Contribution ID: **62** Type: **not specified**

High Resolution TDC ASIC for CBM-ToF

Friday, 12 February 2010 12:10 (20 minutes)

In 2005 the GSI ASIC design group started with an evaluation of different TDC core architectures for a high resolution TDC for the CBM Time of Flight detector. Based on this evaluation a high resolution TDC fitting to the ambitious requirements of the CBM experiment was developed.
Now with the GSI Eventdriven TDC with 4 channels (GET4) ASIC a prototype is available with a time resolution of better than 25 ps, a double hit resolution <= 3.2 ns and which can cope with an event rate of several 100 kHz/ch. In this talk the architecture of this TDC and the measurement results of the ASIC specification will be presented. The talk will focus on the TDC core which is based on a delay locked loop and the event driven readout system which is mandatory for the triggerless DAQ schema of CBM.
After this we will demonstrate the FEET TDC pc board which was designed to make the GET4 ASIC availbale for detector tests. Two GET4 TDCs together with some glue electronics are mounted on this board. It is part of a set of pc boards which builds up a demonstrator readout electronics for RPC detectors.

Primary author: Dr FLEMMING, Holger (GSI Darmstadt)

Presenter: Dr FLEMMING, Holger (GSI Darmstadt)

Session Classification: Gas systems and ageing (II) and digital systems