Contribution ID: **134** Type: **Oral**

The NA62 straw detector read-out system

Tuesday, September 21, 2010 11:25 AM (25 minutes)

The NA62 straw detector, made of 7200 cylindrical straws, is a combined spectrometer and veto detector, which is part of the NA62 experiment at the CERN SPS accelerator. A new version of the full read-out system has been designed and tested on a detector prototype.
A description of this system will be given, as well as test results and plan for future scaling.

Summary

The NA62 straw detector is a gaseous detector consisting of 7200 drift 2.1 meter long tubes organized in 4 stations, each station having 4 views. It aims at providing tracking information with a good resolution and a charged particle veto signal. The drift time measurement performed on the front-end electronics is indispensable for good tracking resolution.
A new prototype of the read-out chain has been developed, constructed and tested. The on-detector electronics consists of an 8 channel analogue front end chip containing a fast preamplifier, a tail cancellation circuitry, base line restorer and a discriminator, followed by a FPGA-based read-out chips including a 1ns time to digital converter and the readout protocol to extract the data and transfer them to common NA62 readout module.
A complete description of the different components of this chain is given, as well as test beam results.

Primary author: LICHARD, Peter (CERN)

Presenter: LICHARD, Peter (CERN)

Session Classification: Systems, planning, installation, commissioning and running experience

Track Classification: Systems. Planning, installation, commissioning and running experience