Contribution ID: **90**   Type: **not specified**

Live Monitoring and Quasi-Online Event Reconstruction for KM3NeT

Tuesday 15 September 2015 12:48 (12 minutes)

KM3NeT is a new generation neutrino telescope in the abyss of the Mediterranean Sea. It will instrument a volume of several cubic kilometres of sea water in its final configuration. Currently, the project is in its first phase with the aim of constructing and installing 31 detection units up to 700m in height, each equipped with 18 digital optical modules. The optical modules are equipped with 31 3-inch photomultipliers to detect the Cherenkov light of charged secondary particles produced in high-energy neutrino interactions. This contribution describes a live detector monitoring system, which enables real-time parameter control and a reconstruction of events soon after the data acquisition. It also allows a rapid response to or provision of external alarms of multi-messenger campaigns. The data acquisition system of KM3NeT provides pre-filtered data in event form, as well as general detector status messages. The events will be processed almost in real-time - with a delay in the range of minutes - using fast reconstruction mechanisms. This allows for high-level monitoring of the detector status using derived distributions, such as time and charge distributions and event rates. The resulting data is displayed on a web page using a dedicated, flexible web service. The same service also displays low-level monitoring data such as trigger rates, PMT hit rates and the general status of the optical modules.

Author: GAL, Tamas (University of Erlangen)

Presenter: GAL, Tamas (University of Erlangen)

Session Classification: Parallel Session E