Contribution ID: **496**   Type: **Oral**

Development of user interface for top tracker control software of Juno experiment

Thursday 18 April 2019 16:45 (15 minutes)

The Jiangmen Underground Neutrino Observatory (JUNO) is a multipurpose reactor neutrino experiment currently under construction in Jiangmen, China. The main physics goal of Juno is to determine the neutrino mass hierarchy by measuring the reactor antineutrino flux from two Nuclear Power Plants located in southern China.

The experiment will be a record in energy resolution (3% at 1 MeV) required to achieve main goal, in the number of large photomultipliers installed (20000 20 inch PMTs) and unprecedented wide photocatode coverage (77%).

The JUNO detector will consist of three main systems:
a central liquid scintillation detector, ultrapure water Cherenkov veto around the central detector and a muon tracker veto which will be installed on top of of the detector.

Using of two veto systems allows to reduce different sources of background more accurate.

The muon tracker will use a plastic scintillator taken from the OPERA experiment currently being decommissioned.

However the electronics of top tracker is developing completely separated from what was used in OPERA which requires to develop from scratch the top tracker control software.

The important task is development of graphical user interface for control software.

One should take into account that to achieve required energy resolution and be able distinguish neutrino mass hierarchies Juno must collect data more than 6 years.

The problem of developing and creating a convenient, reliable and friendly (ergonomic) graphical interface is particularly relevant in this regard.

As the basis of the graphical interface, it was decided to use the web-interface. This choice is done due to the rapid development of web technologies, as the basis for building modern interfaces, and existing solutions in this area.

Author: Mr SHAROV, Vladislav (Laboratory of nuclear problems. V. P. Dzhelepova)

Co-author: Mr KORABLEV, Denis (DLNP JINR)

Presenter: Mr SHAROV, Vladislav (Laboratory of nuclear problems. V. P. Dzhelepova)

Session Classification: Information Technologies

Track Classification: Information Technology