

Performance and aging of OPERA bakelite RPCs

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OPERA is an experiment dedicated to the observation of ν_{μ} into ν_{τ} oscillations through tau appearance on the CNGS beam. The experiment is composed by two identical super-modules, each with a target section (made of emulsion/lead bricks alternated to a scintillator Target Tracker) and a muon spectrometer (instrumented with bakelite RPCs and drift tubes).

The RPCs are operated in streamer mode with the gas mixture $\text{Ar}/\text{C}_2\text{H}_2\text{F}_4/\text{isoC}_4\text{H}_{10}/\text{SF}_6=75.4/20/4/0.6$. The performances of the RPC system are presented. The sample of events induced by the CNGS neutrino beams as well as a large sample of cosmic rays have been used to study general properties of streamer-operated RPCs. The aging status of the detector, after four years of operation, is also described.

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