

# Characteristic Study and Development of Surface Resistivity Measuring Device for Resistive Plate Chamber Detector

Friday, 23 February 2018 10:30 (20 minutes)

The India based Neutrino Observatory (INO) experiment is an approved mega science project to build a huge magnetized Iron Calorimeter (ICAL) detector with largest (~ 30,000) number of Resistive Plate Chamber (RPC) detectors. Cavern of this ICAL will be under the mountain having overburden of ~1.5 km. The ICAL primary motive is to understand the atmospheric neutrinos and related parameters. The RPC was a parallel plate gaseous detector and it provides good spatial resolution (<1cm) with a time resolution, better than ns, comparable to that of scintillator detector. We report, the work done at the RPC stack, IICHEP Madurai and performance study of the advance surface resistivity-scanning device. The study involves the characterization of RPC detector, such as surface resistivity measurement, high voltage test and Gas leak test of 2m × 2m size RPC detectors made up of the Saint Gobain glass and Saint Gobain Company, Chennai (India), makes gas gaps. We also report the performance study of the advance automatic surface resistivity-scanning system, which is fully designed and developed by us for the surface scanning of ~60000 electrodes. This AASS's jig is modified and equipped with a Force Sensing Resister (FSR), which is able to sense the contact force between jig and RPC electrode's surface. Therefore, resistance measurement of RPC electrodes can be done at nearly constant contact force and without fluctuation.

## Reference.

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**Session Classification:** New Ideas