Aging effects in the RPC's of the BaBar Experiment

(title assigned)

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The performance of the RPC's working at the BaBar experiment will be reported in this talk. Results from 1999 up to now will be described focusing on the problems (high dark current, detection efficiency reduction) affecting the operation of the detector. A brief report from the R&D activities to explain the anomalous behavior of the detector will be given.

Summary of Talk: The RPC's have been employed in the BaBar experiment to instrument the iron plates used to return the magnetic flux. The system is used to discriminate muons from pions and to identify neutral hadrons. The RPC's produced between 1996 and 1998 have been tested in Italy and at SLAC showing satisfying performances before the installation in the detector. Data taking of the BaBar experiment started in summer 1999 and the RPC system worked during the first months at high temperature (greater than 36^o C). Very soon after, a big fraction of the chambers showed anomalously high currents (about 10 times the initial value) and a continuous reduction of the detection efficiency. Systematic investigations of the peculiar behavior of these RPCs has been carried out both with data coming from the RPCs installed in the detector and on chambers in the laboratory. Preliminary conclusions seem to relate the problems to the correlated actions of high temperature, high voltage, and abundance of linseed oil.