

11th Beam Telescopes and Test Beams Workshop



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Tests of Resistive Plate Chambers with ecological gas mixture at GIF++ facility

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A strong effort is ongoing to find ecological alternative gas mixtures to be used for Resistive Plate Chambers (RPCs). RPCs are widely used in present LHC experiments and in other applications. Main gases used for proper RPC operations in avalanche mode are Tetrafluoroethane (usually called R134a) and SF₆. Both these gases have high Global Warming Potential and the community is starting studying possible ecological replacements.

A collaboration among different experiment and laboratories (ATLAS, CMS, ALICE, LHCb/SHiP and CERN-EPDT group) is using the GIF++ facility to test long term performance of RPC under irradiation using ecological mixtures.

The experimental setup, the tools to monitor the system and the results from latest test beams together with long term plans will be presented.

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Session Classification: Experiments - Non-LHC