Contribution ID : **230** Type : **Plenary/section talk**

# Test beam studies of the TRD prototype filled with different gas mixtures based on Xe, Kr, and Ar

*Tuesday, 11 October 2016 17:30 (15)*

Towards the end of LHC Run1, gas leaks were observed in some parts of the Transition Radiation Tracker (TRT) of ATLAS. Due to these leaks, primary Xenon based gas mixture was replaced with Argon based mixture in various parts. Test-beam studies with a dedicated Transition Radiation Detector (TRD) prototype were carried out in 2015 in order to understand transition radiation performance with mixtures based on Ar and Kr. We present and discuss the results of these test-beam studies with different active gas compositions.

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**Session Classification :** Methods of experimental physics - parallel II

**Track Classification :** Methods of experimental physics