

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

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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.

**Primary author(s)** : Mr. CELEBI, Emre (Bogazici University)

**Co-author(s)** : BOLDYREV, Alexey (Moscow State University); Prof. ROMANIOUK, Anatoli (National Research Nuclear University "MEPhI"); Mr. MAEVSKIY, Artem (Skobeltsyn Institute of Nuclear Physics (SINP MSU)); Dr. REMBSEER, Christoph (European Organization for Nuclear Research "CERN"); DERENDARZ, Dominik Karol (Polish Academy of Sciences); Mr. FILIPPOV, Konstantin (National research nuclear university «MEPhI»); Mr. VOROBEV, Konstantin (National Research Nuclear University MEPhI (Moscow Engineering Physics Institute)); ZHUKOV, Konstantin (P.N. Lebedev Institute of Physics; Russian Academy of Sciences); Mr. JOOS, Markus (European Organization for Nuclear Research "CERN"); Dr. TETERIN, Peter (National Research Nuclear University "MEPhI"); Mrs. GURBUZ, Saime (Bogazici University); Mr. MURAVYEV-SMIRNOV, Sergey (National Research Nuclear University "MEPhI"); KONOVALOV, Serguei (P.N. Lebedev Institute of Physics; Russian Academy of Sciences); Prof. CETIN, Serkant Ali (Istanbul Bilgi University); Mr. BROOKS, Timothy (European Organization for Nuclear Research "CERN"); Dr. TIKHOMIROV, Vladimir (P.N. Lebedev Physical Institute, Russian Academy of Sciences)

**Presenter(s)** : Mr. CELEBI, Emre (Bogazici University)

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