

# Accepted Manuscript

The ALICE Transition Radiation Detector: Construction, operation, and performance

ALICE Collaboration

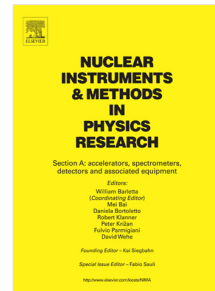
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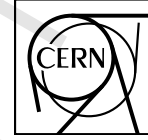
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### Abstract

7 The Transition Radiation Detector (TRD) was designed and built to enhance the capabilities of the  
8 ALICE detector at the Large Hadron Collider (LHC). While aimed at providing electron identifica-  
9 tion and triggering, the TRD also contributes significantly to the track reconstruction and calibration  
10 in the central barrel of ALICE. In this paper the design, construction, operation, and performance  
11 of this detector are discussed. A pion rejection factor of up to 410 is achieved at a momentum of  
12 1 GeV/c in p-Pb collisions and the resolution at high transverse momentum improves by about 40%  
13 when including the TRD information in track reconstruction. The triggering capability is demon-  
14 strated both for jet, light nuclei, and electron selection.

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\*See Appendix A for the list of collaboration members

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