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# Effect of interference in angular distribution and new opportunities for Transition Radiation Detectors

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Identification of ultra-relativistic hadrons with a good precision is a challenge for the Detector Physics. The only known way to identify multi-TeV hadrons (Pi, K and p) is using Transition Radiation Detectors. This type of detectors, however, also requires improvements to satisfy all modern requirements [1 - 3]. For that to be done, it is necessary to know all features of transition radiation. In this report we present new theoretical results concerning complex interference structure of angular distribution of transition radiation [4]. Also, recent experimental [5 –7] results are compared with the theory and simulations in GEANT4 [8]; the latter was modified in accordance with recent theoretical and experimental results.

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