

Advanced Time over Threshold method of charge measuring for time-of-flight and calorimetric applications

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Modified Time over Threshold (TOT) method by charge and amplitude measurements use analog sine pulse shaper. The Time-Of-Flight front-end electronics for HADES (GSI, Germany) experiment based on modified TOT method are presented. The sine pulse shaper made it possible to reduce the error of the TOT method and ensure the uniqueness of the charge spectrum. With a response threshold of 35 mV, the amplitude range of measurements reaches 20 V with an accuracy of 0.35%. New experience of using especially modified TOT FEE for RPC applications with 1mV threshold range for BM&N (JINR, Dubna, Russia) presented too. Particular attention is paid to the study of the accuracy parameters of the modified by analog sine pulse shaper TOT method.

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