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THE TOT METHOD WITH A PULSE SHAPER BASED ON THE MATHEMATICAL FUNCTION OF THE RAISED COSINE.

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The Time Over Threshold (TOT) method using a pulse shaper based on the mathematical function of the raised cosine (FPC) is described. FPC has an important property for this method –the formation of a smooth pulse, with the variability of the smoothing coefficient and response time. At the same time, the shape of the FPC pulse does not depend on the input pulse waveform in a given time range. Thus, on the basis of the FPC, it was possible to create a pulse sine shaper with a given time response, providing an unambiguous dependence of the pulse duration on the input charge, as well as to improve accuracy characteristics due to optimal spectral filtering in the FPC. A pulse sine shaper based on FPC was successfully used in the reading systems of the HADES experiments (GSI, Darmstadt, Germany) and BM&N (JINR, Dubna). The total number of reading channels was more than 5000, the method error is about 0.3%.

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