

DEVELOPMENT OF PULSE-SHAPE ANALYSIS FOR DISCRIMINATION OF LOW ENERGY SCINTILLATION SIGNALS FROM PHOTOMULTIPLIER NOISES

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Pulse shape analysis technique for discrimination of low-energy scintillation signals from the photomultiplier noises was developed. Samples of low-energy signals, free from photomultiplier noise admixture were measured in special calibration runs. The algorithm of preliminary signal processing to determine beginning and base line of the pulses was developed. Comparison of different pulse shape discrimination methods was done. Among them are the methods of "average time", optimal digital filter, least squares and artificial neural networks. The 100 % discrimination efficiency for CdWO₄ scintillation signals with energies of ≥ 15 keV from photomultiplier noises was achieved.