

**NA016**

## **Correction of the pulse pile-up reject and the pulse pile-up for gamma ray spectrometry**

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Three corrections are important in measurements from gamma ray detectors: Dead time correction, pile-up pulses correction and rejected pile-up pulses correction. Correcting the dead time from these corrections is well known and frequently performed. However, corrections to the pile-up pulses that significantly affect the spectrometric analysis accuracy and the pulses rejected by the pile-up rejection circuit used to prevent these pulses are not known. There are only a few studies available in the literature on the pulse pile-up correction. However, it is annoying and time consuming to implement these correction methods. That is, there is no practical correction method in the literature. In addition, there is no method for correcting the pulses rejected by the reject circuits. Recently, studies on these last two corrections have been made. In this study, a practical pile-up and rejected pulse correction methods are proposed. These proposed methods have been experimentally tested on a marble sample. Experimental studies were carried out on the determination of the mass reduction coefficient of a marble sample using  $^{60}\text{Co}$  and  $^{137}\text{Cs}$  radioactive sources.