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## Digitized Positron Lifetime Spectrometer for the Simultaneous Recording of Time and Energy Information

Positron annihilation (PA) techniques became, by now, routinely used nuclear techniques with applications which range from structural investigations of materials to biological samples and medical applications in PET. As at present, both PA spectroscopy and PET could profit from an improvement in fast coincidence technique, it was investigated how far could a fully digitized positron lifetime spectrometer ( with full event storage capability for the simultaneous recording of time and energy information of the gamma rays) offer advantages over a conventional setup employing fast analog nuclear electronics. The additional information allows off-line analysis which could be particularly useful in separating various annihilation channels, like positronium contribution, recently recognized to offer a new window of observation not only in PA spectroscopy but in PET applications as well.

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