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# Fast-timing experiments using the FIPPS spectrometer

In early 2018, fast-timing experiments were performed using the FIPPS spectrometer. The setup consisted of eight HPGe clover detectors and was equipped with 16 ancillary ultra fast $LaBr_3$(Ce) timing detectors. This contribution discusses the assembly and properties of the mounted fast-timing setup while giving insight into problems and their respective solutions. The principle of lifetime measurement is demonstrated using the newly introduced time-symmetrisation method and including examples of the $^{115}$Sn(n,$\gamma$)$^{116}$Sn experiment. The half-life of the $4_2^+$ state was determined for the first time demonstrating the feasibility of probing non-yrast states and measuring their lifetimes using (n,$\gamma$) reactions.

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