

Creation and observation of the di-positronium molecule

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(ABSTRACT)

We have developed a multi-stage positron accumulator capable of delivering up to 10^8 positrons in a pulse with a temporal width (FWHM) of around 0.5 ns. This system is designed to deliver a large positron pulse with a short spatio-temporal extension such that the local positron density on the surface of a clean Al (111) target is high enough to allow the formation of di-positronium molecules. We report preliminary results.