Abstract Submitted
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Measurement of the Decay Rate of the Negative Ion of Positronium (Ps^-) G. GWINNER, University of Manitoba, Winnipeg, Canada, F. FLEISCHER, K. DEGREIF, M. LESTINSKY, F. PLENGE, D. SCHWALM, Max-Planck-Institute for Nuclear Physics, Heidelberg, Germany, V. LIECHTENSTEIN, Kurchatov Institute, Moscow, Russia — Consisting of two electrons and a positron, the negative ion of positronium (Ps^-) represents the simplest three-body system with a bound state. Its constituents are stable, point-like particles, and it is essentially free from perturbations by strong interaction effects. Together with the rather unique mass ratio, these properties make the positronium ion an interesting object for studying the quantum-mechanical three- body problem. We present a new determination of the decay rate, using a beam-foil method and a stripping-based detection technique. The measured value of $\Gamma = 2.089(15)$ /ns is a factor of six more precise than the previous experimental result, and there is excellent agreement both with the latter and with the theoretical value.

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