

Abstract Submitted
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Measurement of Fusion Neutrons and Capture Neutrons From Muon Stops in Deuterium for MuSun R. KRESWELL NEELY, Univ of Kentucky (on behalf of the MuSun collaboration) — The MuSun experiment at PSI will determine the μ^- capture rate in ultra-pure deuterium gas, Λ_d , to a precision of 1.5% by measuring the time distribution of decay electrons. MuSun uses an array of eight liquid scintillator detectors to detect neutrons. Muons in deuterium produce neutrons by two processes: muon capture, $\mu + d \rightarrow n + n + \nu_\mu$, and muon catalyzed fusion, $dd\mu \rightarrow {}^3He + n + \mu$. Furthermore, neutrons from high- Z captures indicate the occurrence of muon stops in either gas impurities or chamber walls and may be used as a quality check. I will discuss particle identification and discrimination, as well as what may be inferred about μd atomic kinetic parameters.

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