Abstract Submitted
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Precision Measurements of Beta-Decay Rates EDDIE HANSEN, JUSTIN PEATROSS, SCOTT BERGESON, MICHAEL WARE, None — We describe an apparatus for measuring beta decay rates from a variety of nuclear isotopes with a precision of one part in 10^4 per day of measurement. We simultaneously measure decay rates from Cl-36, Sr-90, Co-60, Cs-137, Na-22, Eu-152, Eu-154, Ba-133, and Mn-54. Each sample is measured sequentially on multiple detectors, and the detectors in turn sample the various decay sources, which rotate into preset positions throughout each day. The experiment is designed to run continuously over many years to check for possible annual variations in the beta decay rates, which were recently suggested to vary with the Earth-Sun distance [J. H. Jenkins, et al., Astropart. Phys. 32, 42-46 (2009)]. Our apparatus is surrounded by pressure-controlled argon gas, and the temperature is held constant to remove possible seasonal influences of the environment.

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None

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