

Abstract Submitted
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Updates on β - ν correlation measurement of optically trapped ^{21}Na atoms REINA MARUYAMA, JAMIL ABO-SHAEER, PAUL VETTER, STUART FREEDMAN, UC Berkeley/LBNL — Using magneto-optically trapped sodium-21 neutral atoms produced at the Berkeley 88-inch cyclotron, we are measuring the beta-neutrino correlation coefficient. Optical traps offer a suitable environment for precision measurements, and offer us isotopically pure sodium atoms that are localized, nearly at rest, and relatively free from external perturbations. We can reconstruct the decay kinematics from the time-of-flight of the daughter nuclei from the trap to our detector. Our last measurement yielded a beta-neutrino correlation coefficient, $a_{\beta\nu}$, that disagrees by 3.6σ from the Standard Model prediction. I will discuss the status of the experiment, our studies of systematic effects, and possible explanations for this discrepancy.

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