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Towards a Beta Asymmetry Measurement of Polarized Radioactive Atoms in an Optical Dipole Trap HAIYAN WANG, DAVID FELDBAUM, ANDREW HIME, DAVID VIEIRA, XINXIN ZHAO, Los Alamos National Laboratory — Laser cooled and trapped radioactive atoms provide an ideal sample for studying parity violation in beta decay. We present recent progress in undertaking a high precision beta-recoil measurement of radioactive ^{82}Rb atoms in an optical tweezer. We have demonstrated the loading of ^{82}Rb atoms from a magneto-optical trap (MOT) to a far off resonance dipole trap formed by a YAG laser. A preliminary study of the trap loading efficiency and optical pumping into a stretched state will be presented. In our improved beta asymmetry measurement, we plan to load ^{82}Rb atoms from a MOT into an optical dipole tweezer and then beam the atoms down to a science chamber where the atoms will be polarized and their beta decay measured.

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