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Overview of the UCNA Experiment JIANGLAI LIU[1], California Institute of Technology, UCNA COLLABORATION — In neutron beta decay, the beta asymmetry A is the angular correlation parameter between the neutron spin and the outgoing electron momentum. A measurement of A allows a direct determination the ratio of the nucleon axial to vector coupling constants g_A/g_V. While this ratio plays a significant role in solar fusion as well as in understanding other phenomena (in many instances in which the weak interaction in nuclear decays is involved), the axial coupling constant can not presently be calculated from first principles following the Standard Model. However, in combination with the neutron half life, it can provide strigent constraints to the Standard Model. The UCNA experiment is designed to measure the neutron decay A parameter to very high precision (<0.5%), using the ultracold neutron (UCN) source at the Los Alamos Neutron Science Center. UCN are transported in a guide system, fully polarized, then loaded into a decay trap within a solenoidal beta spectrometer. A proof-of-principle measurement in 2007 has been published, and we are on track to produce a 1% measurement of A based on data collected in 2008. In this talk, I will present an overview of the experiment, give a status report of the data analysis and ongoing data taking, as well as provide a projection for the near future.

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