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Fierz Interference results and analysis from most-recent UCNA data[1] XUAN SUN, Caltech, UCNA COLLABORATION — The Fierz Interference term, b in the Standard Model expression of the neutron beta decay rate, acts as a probe of beyond Standard Model physics due to its sensitivity to scalar and tensor couplings. Experimentally, b manifests as an energy distortion in the neutron beta decay energy spectrum. Furthermore, in the beta decay asymmetry parameter, the presence of a non-zero b introduces an energy-dependent distortion in A_0, yielding $A_{0,b}(E)$. Using the most recent A_0 data from the Ultracold Neutron Asymmetry experiment (UCNA), located at Los Alamos National Laboratory (LANL), we extend the previous results on direct b extraction via the energy dependence of $A_{0,b}(E)$. Furthermore, we present a supplementary analysis of the direct spectral measurements of the neutron beta decay and extract a b value from that as well. Finally, we compare and contrast the advantages and limitations of these two methods of b extraction.

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