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Prospects for Improved Isotopic Reactor Antineutrino Flux Measurement YONAS GEBRE, BRYCE LITTLTJOHN, PRANAVA SURUKUCHI, Illinois Institute of Technology — Recent reactor antineutrino experiments have observed a deficit in the antineutrino flux coming from nuclear reactors. Now referred to as the 'Reactor Antineutrino Anomaly', this deficit might be caused by a miscalculation of the antineutrino flux from the decay of one or more of the fission isotopes namely ^{235}U, ^{238}U, ^{239}Pu and ^{241}Pu in nuclear reactors. This analysis looks at how well we can use current experiments results to determine the antineutrino flux coming from each of the fission isotopes and their contribution to the measured deficit. New short-baseline reactor neutrino efforts can produce unique new flux measurements that can improve constraints on isotopic antineutrino flux contributions beyond those enabled by existing flux measurements conducted over the past three decades. In particular, having the same detector placed at an HEU (Highly Enriched Uranium) and then at an LEU (Low Enriched Uranium) reactor will produce a series of highly-correlated antineutrino flux measurements. This poster will present future achievable constraints on isotopic contributions to the reactor antineutrino flux enabled by the addition of flux measurements at HEU and LEU reactor cores.

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