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Precision lifetime measurement of ^{15}O DANIEL BURDETTE, TAN AHN, JACOB ALLEN, DANIEL BARDAYAN, University of Notre Dame, FREDERICK BECCHETTI, University of Michigan, DREW BLANKSTEIN, MAXIME BRODEUR, BRYCE FRENTZ, MATTHEW HALL, JAMES KELLY, JAMES KOLATA, JACOB LONG, PATRICK O'MALLEY, BRADLEY SCHULTZ, SABRINA STRAUSS, ADRIAN VALVERDE, University of Notre Dame — As one of the most tested scientific theories, the Standard Model (SM) provides a complex but incomplete description of matter in the universe. There is currently a strong campaign to probe physics beyond the SM from various avenues on both the energy and precision frontiers. One such example on the precision side is ensuring the unitarity of the Cabibbo-Kobayashi-Maskawa matrix, which requires a measurement of V_{ud} that is both precise and accurate. This can be achieved through comparative half-life measurements of super-allowed beta decays. Pure Fermi cases have gotten a majority of the attention but mixed transitions are gaining interest as they can provide a mean to test the accuracy of V_{ud}. Aligning with these interests, the half-life of ^{15}O has been measured using a beta counting station after the *TwinSol* facility of the Nuclear Science Laboratory at the University of Notre Dame. The new half-life provides a more robust determination of the ft value of the transition in anticipation of future measurements of the Fermi to Gamow-Teller mixing ratio.

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