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Precision Half-life Measurement of 33Cl PATRICK O'MALLEY, MAXIME BRODEUR, University of Notre Dame, TWINSOL COLLABORATION — The understanding of fundamental symmetries has really been expanded in the past decade thanks to new precision measurements. In particular, the techniques used to extract the V_{ud} matrix element from superallowed pure Fermi transitions could be tested using precise determinations of ft values for superallowed mixed transitions between mirror nuclides. The calculations of ft values require the half-life, branching ratio, and Q-value. The accepted ^{33}Cl decay half-life arises from a series of old measurements. In this work, the life-time was determined counting β particles from the decay of the implanted ^{33}Cl. The ^{33}Cl beam was produced via the $^{32}\mathrm{S}(d,n)$ transfer reaction and separated by the TwinSol facility of the Nuclear Science Laboratory of the University of Notre Dame. The ^{33}Cl data will be presented and the analysis will be discussed.

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