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Re-measuring the half-life of ⁶⁰Fe PHILIPPE COLLON, University of Notre Dame, ANDREAS STOLZ, SAM AUSTIN, Michigan State University, MA-NOEL COUDER, University of Notre Dame, IRSHAD AHMAD, JOHN GREENE, Argonne National Laboratory, DANIEL ROBERTSON, CHRIS SCHMITT, MATT BOWERS, WENTING LU, KIRK POST, MICHAEL CARILLI, University of Notre Dame — A recent experiment both at PSI and at Munich on the 60 Fe lifetime points to a $T_{1/2}$ for ⁶⁰Fe that is possibly 70% higher (i.e. ~2.6x10⁶ years) than the presently accepted value $(1.5 \times 10^6 \text{ years})$. ⁶⁰Fe is mainly produced in core collapse supernovae explosions and these new results open up a number of questions as many factors scale with this number; from the ⁶⁰Fe abundance determination with gamma ray telescope measurements to recent 60 Fe(n, γ) cross section studies. We are presently working on a double-pronged attempt at re-measuring this half-life using the "old" AMS technique used by the Kutschera group in 1984 as well as a low-background activity measurement on the growth of ⁶⁰Co from the decay of ⁶⁰Fe. Both rely however on a clean production of a ⁶⁰Fe sample as measurements rely on measuring the 60 Co decay γ -line from 60 Co produced by the decay of 60 Fe. Beam time was made available at the NSCL to produce a well characterized ⁶⁰Fe sample at the focal plane of the A1900. The ⁶⁰Fe ions were implanted in a high purity Al target. We will report the results from this run as well as from the chemical separation of the 60 Fe and first measurements of the sample.

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