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## ☒337☒ Increasing the ionization yield for the detection of $^{236}\text{U}$ and $^{233}\text{U}$ by AMS

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The detection efficiency of Accelerator Mass Spectrometry for long lived uranium isotopes ( $^{236}\text{U}$  or  $^{233}\text{U}$ ) is mainly limited by the rather low yield of the corresponding negative ions extracted from a caesium sputter ion source ( $\approx 10^{-4}$ ). With our new sample preparation method environmental U is embedded in only 200  $\mu\text{g}$   $\text{Fe}_2\text{O}_3$  matrix which is then mixed with  $\text{PbF}_2$ . Extracting U as  $\text{UF}_5^-$  instead of  $\text{UO}^-$  yields an improvement in detection efficiency by more than a factor 10.  $\text{UF}_5^-$  extraction seems advantageous for the suppression of molecular isobaric background ( $^{232}\text{ThH}^{3+}$ ,  $^{235}\text{UH}^{3+}$ ) and allows operation at lower He stripper gas pressure.

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