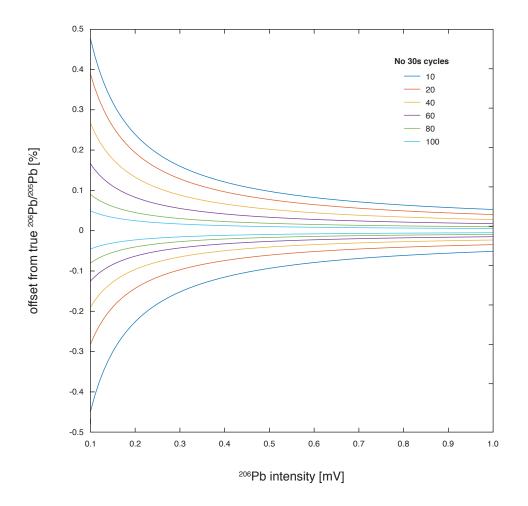
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Supplementary Figure 1 Results of a Monte Carlo model of the effect of ATONA baseline length on accuracy of a measured ratio (e.g. ${}^{206}Pb/{}^{205}Pb$) acquired with a limiting intensity < 1 mV (relative to $10^{11} \Omega$ amplifier). ${}^{205}Pb$ intensity is fixed at 2 mV, ${}^{206}Pb$ intensity varies between 0.1–1 mV. Random samples of populations of real baseline measurements from Fig. 3B at 300–3000 s (10–100 cycles of 30 s) were applied to both intensities, generating a distribution of measured ${}^{206}Pb/{}^{205}Pb$ ratios. The figure displays 1 SD bounds of the expected offset from the true ${}^{206}Pb/{}^{205}Pb$, illustrating the necessity of long baseline acquisition times when beams < 1 mV are analysed.