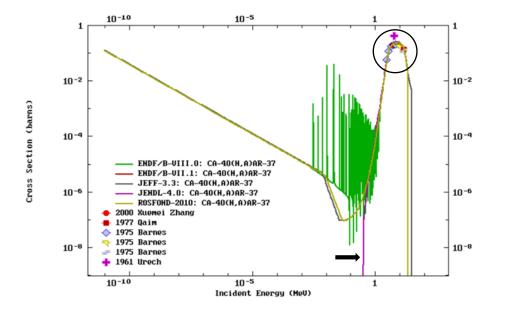
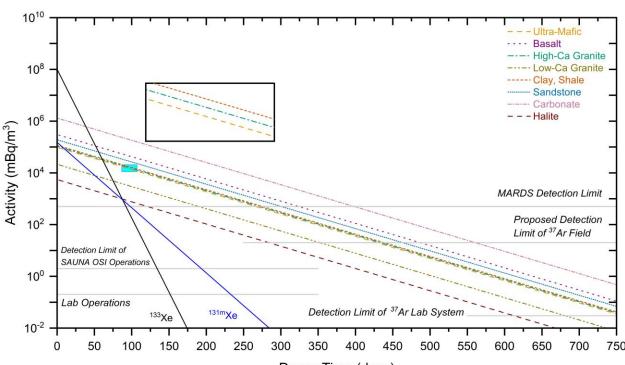
SnT2023 CTBT: SCIENCE AND TECHNOLOGY CONFERENCE HOFBURG PALACE - Vienna and Online 19 TO 23 JUNE

Improving Estimates of Production Rates of <sup>37</sup>Ar By Underground Nuclear Explosions in Various Geologies Khiloni Shah, Brandon DeLuna, Nicholas Kaitschuck, Derek Haas The University of Texas at Austin





The thermal neutron cross section for  ${}^{40}Ca(n,\alpha){}^{37}Ar$  is poorly understood, but has great potential utility for nuclear explosion monitoring because  ${}^{37}Ar$  is a medium-lived isotope that can be detected several hundred days after an explosion occurs. Goal: How much does the elemental composition of rock and the presence of thermal neutrons impact the predicted yield of <sup>37</sup>Ar.



Decay Time (days)