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DATING WITH ATOM TRAP TRACE ANALYSIS –THE AR-39-ATTA-APPARATUS

We have developed an Atom Trap Trace Analysis setup for ^{39}Ar as well as an extraction and separation system for water and ice samples. Our results reveal the potential of this table top experiment based on laser cooling techniques to routinely measure small samples down to 0.1 mL STP of argon within less than a day. For the first applications to date groundwater we achieved a stable atmospheric count rate of 3.58 ± 0.10 atoms/h.

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