

Accelerator Mass Spectrometry (AMS) – what is it, and why do we need it?

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Accelerator Mass Spectrometry is an exquisitely sensitive technique for counting single atoms of rare isotopes. It spun off from fundamental nuclear physics research, and makes extensive use of the basic tools of the experimental nuclear physicist – accelerators, particle detectors, and ion sources. A brief introduction to the techniques of AMS will be given, with particular reference to its debt to nuclear physics.

Applications of the technique are very wide ranging, and span fields as diverse as archaeology, oil-field engineering, climate change, landscape evolution, biomedicine, nuclear astrophysics, and tracing nuclear discharges. Some representative applications will be discussed.