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【335】Ion Laser InterAction Mass Spectrometry – providing utmost isotope abundance sensitivity

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Accelerator Mass Spectrometry (AMS) is the technique of choice for the detection of environmental levels of long-lived radionuclides with typical relative abundances of 10^{-12} to 10^{-16}. Interferences from stable isobars however used to restrict the applicability of this method to selected nuclides. The novel Ion Laser InterAction Mass Spectrometry (ILIAMS) technique at the Vienna Environmental Research Accelerator VERA overcomes this limitation by selective laser photodetachment of isobars in the ion beam. This opens up exciting possibilities in nuclear physics research (^{90}Sr, ^{99}Tc, ^{135}Cs), astrophysics (^{182}Hf), and geology (^{26}Al, ^{36}Cl). This presentation will give an overview of the technique and its applications.

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