Abstract Submitted
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Development of ^{129}I AMS at the Nuclear Science Laboratory for Sampling in the Great Lakes Region[1] MICHAEL SKULSKI, TYLER ANDERSON, LAUREN CALLAHAN, ADAM CLARK, AUSTIN NELSON, PHILIPPE COLLON, University of Notre Dame, MICHAEL PAUL, The Racah Institute of Physics, The Hebrew University of Jerusalem — ^{129}I in the environment primarily comes from its release from nuclear fuel reprocessing centers in Europe. Iodine moves through the environment very easily as it is highly soluble and easily incorporated into biological organisms. This high mobility makes ^{129}I an excellent environmental tracer in a variety of fields including geology, nuclear forensics, and nuclear safeguards. However, because of its long half-life of 15.7 Myr, detection of ^{129}I through direct decay counting methods is often unachievable because of the sample size that would be required. Accelerator mass spectrometry (AMS), on the other hand, is well suited to the detection of ^{129}I as it can identify individual ions through isotopic and isobaric discrimination. The environmental sampling throughout the United States has been primarily limited to the areas surrounding nuclear facilities, but there are few measurements of the concentrations of ^{129}I throughout the rest of the country. This has inspired the AMS group of the Nuclear Science Laboratory at the University of Notre Dame to measure the concentrations in the Great Lakes region to establish a baseline for measuring the change of these concentrations in the future. Preliminary results of ^{129}I measurements and future plans will be discussed.

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