

Abstract Submitted  
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**PIXE Analysis of Aerosol and Soil Samples Collected in the Adirondack Mountains** JOSHUA YOSKOWITZ, SALINA ALI, BENJAMIN NADARESKI, SCOTT LABRAKE, MICHAEL VINEYARD, Union College — We have performed an elemental analysis of aerosol and soil samples collected at Piseco Lake in Upstate New York using proton induced X-ray emission spectroscopy (PIXE). This work is part of a systematic study of airborne pollution in the Adirondack Mountains. Of particular interest is the sulfur content that can contribute to acid rain, a well-documented problem in the Adirondacks. We used a nine-stage cascade impactor to collect the aerosol samples near Piseco Lake and distribute the particulate matter onto Kapton foils by particle size. The soil samples were also collected at Piseco Lake and pressed into cylindrical pellets for experimentation. PIXE analysis of the aerosol and soil samples were performed with 2.2-MeV proton beams from the 1.1-MV Pelletron accelerator in the Union College Ion-Beam Analysis Laboratory. There are higher concentrations of sulfur at smaller particle sizes (0.25-1 $\mu$ m), suggesting that it could be suspended in the air for days and originate from sources very far away. Other elements with significant concentrations peak at larger particle sizes (1-4 $\mu$ m) and are found in the soil samples, suggesting that these elements could originate in the soil. The PIXE analysis will be described and the resulting data will be presented.

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