

Comparison of data analyzed by PIXE with XRF in chemical composition for beech forest soil samples collected in Mt. Iwaki

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Abstract

Chemical contents of soil samples were analyzed by Particle Induced X-ray Emission analysis (PIXE) and X-ray fluorescence spectrometry (XRF). A comparison of PIXE with XRF is discussed in composition for soil samples collected at Tashiro-tai plane in Mt. Hakkohda, Japan. There were differences between raw data with these two analytical methods. The content values of major elements show wider variations in PIXE than in XRF. Even though PIXE data were normalized to total oxides = 100%, the serious differences were found in alkali and alkali earth metal contents. Samples carefully prepared for another time indicate the decrease of variability. These are suggesting that the sample preparation process of PIXE might affect on the variability of data; namely, the mixing time of soil samples with Pd standard material is required more than 30 min. in agate mortar.