

## A study on geochemical behavior of minor and rare earth elements in loam and andosol

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The stratum disposition of radioactive waste from atomic powerplant has been a problem at present. The plan of disposition of high level radioactive waste 300-1000m below sea level, is underway. However, there is possibility that it can lift upward by upheaval or erosion. Low level radioactive waste is likely to dispose around soil zone. From the above-mentioned, the affection of radioactive waste elements seem to have the large significance on environmental chemistry. The natural analogue has proceeded on both andosol and loam which are distribute widely throughout Japan. The main objective of this study is : [1] to clarify the weathering process of andosol and loam ; [2] to see the long-term[10-20 thousand years] advance of soil is appropriate for radioactive waste disposition.

The sampling has been performed at kanagawa, Ishigaki Island, main land of Okinawa and Shizuoka. All the samples are normalized with a less-weathered sample to study a weathering process on mineral dissolution and on nature of mineral elements.

From the result of this research, andosol is unaffected by weathering relative to the loam. This is due to weathering resistance, pH, or ion exchange reaction on each element. In fact, some of elements[like Fe] have showed stable behavior or less-weathered in long term. For radioactive disposition, U or Zr is stable for long-term and loam is suitable soil for disposal place under weathering process. To concern about radioactive element such as Cs, Ra, Am and Cm, loam is suitable soil for long-term stabilization and weathering process of same chemical property in Sr, Rb and REE.