New tephra identification method using detailed comparison of major elements characterization of glass inclusion

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Tephra identification method using detailed comparison of major elements characterization of glass inclusion hosted by plagioclase has not been tried.

Mineral composition and refractive indices of hornblende and orthopyroxene partly overlap between DNP,DSP and DKP, which makes difficult to do tephra correlation. The major elements characterization of volcanic glass not have been understood due to weathering. These reason makes more difficalt to do idetification of these tephras. About tephras which have problem in identification due to weathering, I examined that glass inclusion hosted by plagioclase would be effective in identification.

At the foot of provenance volcano, major elements of the middle to lower part of DNP and DSP differed in the content of of SiO_2, Al_2O_3, FeO, CaO, and K_2O from the upper part of these tephras. On the other hand, the major elements of DKP does not change in horizons. The major elements of glass inclusion of DKP distribured Oda-cho Fukui Pref. corresponded these of DKP distribured the Takano formation Nagano Pref.. Moreover, these characteristics corresponded the major element of glass inclusion of DKP tephra distribured at the foot of provenance volcano and differs from DSP. Therefore, DKP of the Takano formation can be correlated with DKP at the foot Mt. Daisen.

If using this sutudy method that is tephra identification method using detailed comparison of major elements characterization of glass inclusion hosted by plagioclase, DNP, DSP, and DKP are discriminated each other.