

SGL045-02

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Age resetting process around an intrusion and excess argon

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A classical study by Hart (1964) who showed age resetting process of a young igneous intrusion into an old rock, triggered several studies on geochronology and intrusions. Subsequently, Dodson (1973) introduced closure temperature based on simple diffusion theory. The concept played an important role in interpreting controversial ages by various method..

In K/Ar system, researchers always keep in mind a presence of excess argon in some minerals. In a contact zone of an igneous intrusion, excess argon in biotite was found in our study (Hyodo and York, 1993). This is probably due to that the accumulated radiogenic argon has been absorbed into the biotite.

A model of two potassium mineral systems which have different diffusion characteristics is considered. Transient heating process and insufficient cleaning process of argon released from a mineral with low closure temperature are assumed. Qualitative argument for formation of excess argon is be discussed.

Keywords: K/Ar system, intrusion, excess argon, biotite, diffusion model