

## Distribution map of $^3\text{He}/^4\text{He}$ ratios in gases in Japan

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[1] JAEA

In this study, we compiled the data of  $^3\text{He}/^4\text{He}$  ratios of the gases in Japan to discuss the variation of  $^3\text{He}/^4\text{He}$  ratios, the role of subducted slab, geological distribution. The previous helium isotope study (Nagao et al. 1981; Sano and Wakita, 1985) found the range of  $^3\text{He}/^4\text{He}$  ratios along the volcanic arc of Japan. However, many systematic data have added recently, the catalog of  $^3\text{He}/^4\text{He}$  ratios have consisted of 600 or more samples.

Geological aspects related to frequency of  $^3\text{He}/^4\text{He}$  ratios were studied following 1:1,000,000 digital geological map (AIST, 2003). The data of  $^3\text{He}/^4\text{He}$  ratios in Neogene area indicate a concentration ranged from  $2R_a$  to  $4R_a$  ( $1R_a = 1.4 \times 10^{-6}$ : the atmospheric ratio). It was higher than Pre-Neogene and Granitoid area. This systematic discrepancy may reflect chronologic effect on storage of radiogenic  $^4\text{He}$  in addition to effects of mantle He.