

## Re-evaluating U-Th-Ra ages of the Tatun Volcanic Group, Taiwan

Y.M. YANG<sup>1\*</sup>, S.R. SONG<sup>1</sup>, K.H. RUBIN<sup>2</sup>

<sup>1</sup>Department of Geosciences, National Taiwan Univ, 1, Sec. 4, Roosevelt Rd., Taipei 10617, Taiwan

(\*correspondence: f04224104@ntu.edu.tw)

<sup>2</sup>SOEST, University of Hawaii at Manoa, 1680 East West Road, Honolulu, HI 96822, USA

Zellmer *et al.* (2015)[1] conducted U-Th-Ra isotope analyses on whole rocks and mineral separates of morphologically young lavas from the Tatun Volcanic Group, Taiwan for isotope dating. Their results did not provide well-behaved U-Th isochrons, but they obtained the U-Th ages of the Shamao dome and Huangzuei volcano; a Ra-Th age was further acquired by analysing <sup>226</sup>Ra concentrations in the whole rock and magnetite separates of the Shamao dome, which turned out much younger than the U-Th age. This discordance can be explained by the inheritance of crystals from older lithologies and implies that these ages represent maximum eruption ages which suggests the Shamao dome may be younger than the 1,370 yrs the Ra-Th analysis yielded. However, in the Ra-Th analysis, only a single whole rock-mineral pair was used, therefore, more analyses must be done to assess this result.

To better constrain the crystallization ages of the Shamao dome, analyses on <sup>226</sup>Ra and Ba concentrations of other mineral phases (plagioclase, amphibole, pyroxene) need to be done [2]. We analyzed U, Th isotopes and concentrations and <sup>226</sup>Ra, Ba concentrations of plagioclase, pyroxene, amphibole, magnetite separates, and whole rock to further constrain the Ra-Th ages of Shamao dome and to additionally validate the results of Zellmer *et al.* (2015). Fission track analyses and Ar-Ar dating will be done alongside for comparison.

[1] Zellmer *et al.* (2015), Geological Society, London, Special Publications 422, 175-188. [2] Rubin & Zellmer (2009), Earth and Planetary Science Letters, 281, 115-123.