

## Factors affecting the kinetics of rhyolitic glass dissolution in Izu-Kozu Island, Japan

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To estimate the dissolution rate in nature, four rhyolites from Kozu Island, different in age (1.2, 1.8, 20, 40Ka) were studied. The initial chemical compositions of the four lavas were nearly equal, so the change of chemical compositions over time can provide weathering rate information. The estimated rhyolite dissolution rate is  $6E-19$ (mol/cm<sup>2</sup>/sec). The experimentally determined dissolution rate of this rhyolite in distilled water is  $4E-17$ (mol/cm<sup>2</sup>/sec) at 15 C. In Kozu island, the effect of past climate change was small, high rainfall throughout the year ensures continuous reaction. As surface area is accounted for in both systems, we infer that the discrepancy between the field and laboratory is caused by the difference in saturation state and the existence of altered layers in nature.