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# Estimating groundwater residence times in southern part of Mt. Yatsugatake from environmental tritium, CFCs and SF6

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To estimate residence times of groundwater in southern part of Mt. Yatsugatake, groundwater samples were collected from 27 springs, and tritium, CFCs and sulfur hexafluoride were analyzed for all samples. Most of the springs have detectable 3H concentrations ranging from 2.4 to 6.9 TU, indicating that these springs were mainly recharged during the post-bomb period. Apparent CFCs and SF6 ages for springs were ranged from 4 to 32 years and from 1 to 26 years, respectively. Results of tracer plots between CFCs and SF6 suggests that the springs are discharged after well-mixing in volcano body. Based on the exponential mixing model, residence times of the groundwater are estimated to be 1 to 32 years, and relatively longer residence time over 20 years are appeared in springs in 1000 m zone.

Keywords: Groudwater age, Mt. Yatsugatake, spring, tritium, CFCs, Sulfur hexafluoride