

## Using tritium in Japanese precipitation for tritium-tracer transit time studies across Asia

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In order to improve management of water resources, water circulation times are estimated with the use of tritium-tracer in catchments across Asia. As an environmental tracer generated in the upper atmosphere, tritium in precipitation is influenced by latitude, season and altitude, and understanding of tritium inputs in water cycle components is needed to estimate mean transit times (MTTs). For future studies, we established the latitude scaling factors to the north and south of the Tokyo area, which has the tritium measurements in monthly precipitation from 1961 to present, by investigating the latitude tritium effect at selected coastal stations in Asia (Gusyev et al., 2016; 2019). In Japan, higher spring tritium was confirmed with winter and spring precipitation samples in 2016 and we observed the altitude effect in March-April snowpack in Hokkaido. The importance of latitude and altitude effects is demonstrated with annual tritium in precipitation at Japanese meteorological stations compared to Tokyo tritium, and with estimated MTTs using 2016 tritium winter and summer baseflow samples at headwater catchments of the Tone and Ishikari River basins, Japan.

### References:

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