

## Winter rainfall tendency in mountain areas and activity of extra-tropical cyclones

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Year-to-year variability of winter rain events in the Sugadairakogen Highlands was investigated using 33-years daily records of rain/snow discrimination at the Sugadaira Montane Research Center, University of Tsukuba, and characteristics of atmospheric circulation in relation to the precipitation-phase changes were analyzed for 12 precipitation events by simple laser-type disdrometer observation with numerical weather simulation.

Keywords: winter precipitation, discrimination of rain and snow, extratropical cyclone, Japanese Alps, Sugadairakogen