Water isotope analysis has become a standard tool for paleo-climate reconstructions, revealing crucial information on variations in temperature, ocean salinity, sea-level, ice-sheet melting, rainfall and atmospheric circulation pathways. In order to interpret and understand water-isotope-based indicators of paleo-climate change, present-day observations are needed. Here, we set out to develop a better understanding of rainwater-isotope variations over Korea and their dependence on the atmospheric circulation, condensation processes and humidity changes. To this end we have collected samples from Baekdu mountain (North Korea), Halla mountain (Jeju Island) as well as rainwater samples that represent the passage of the typhoon Prapiroon over Busan. We analysed these samples using a Los Gatos Research Liquid Water Isotope Analyzer (LWIA). This instrument applies laser ring-down spectrometry to quantify δ\textsuperscript{18}O (delta Oxygen-18 ratios) and δD (delta Deuterium ratios). The effects of latitude, altitude and the amount of precipitation are then quantified using the analyzer. Our very preliminary results identify the “amount effect” as the leading source of spatio-temporal variability in δ\textsuperscript{18}O. We plan to start a regular rainwater isotope monitoring program at the IBS Center for Climate Physics, which will follow the GNIP protocol. Furthermore, drip-water samples from caves in Korea will be collected regularly to determine if δ\textsuperscript{18}O measurements of calcite in stalagmites represent hydroclimate variability.

**Key words:** Oxygen isotope, Latitude effect, Altitude effect, Amount effect, Liquid water isotope analyzer

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