Spatial variation of stable isotopes in precipitation at Kumamoto was observed from November 2009 to December 2010. Precipitation samples were corrected every 2 weeks in 6 stations over Kumamoto area (50km x 70km), and stable isotopes (δD, δ18O) of water were determined. Variations of stable isotopes in precipitation and their inland effect were considered.

The South-Westerly wind in summer and the North-Westerly wind in winter were distinguished in Kumamoto. In order to determine the water vapor transportation pathway from source area, this study was used by the column total of water vapor flux (CTWVF).

This study revealed three types of spatial distribution of stable isotopes in precipitation. The first type is the inland effect; it means the correlation between δ18O in precipitation and distance from the coast. Increasing distance from the coast, decreasing δ18O were observed at each station. This type is corresponding to the direction of CTWVF. The second type is related to the position of Baiu front. Increasing distance from the Baiu front, decreasing δ18O were observed at each station. The third type is related to the precipitation amount effect.

Further research is required to make clear the correlation between three types of stable isotopes in precipitation and cloud system in this area by using meteorological radar and Wind Profiler.