

Comparison between interannual variation of snowfall frequency in Nagasaki and 20th century reanalysis data from 1836 to 1868

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In the present study, we compared interannual variation of snowfall frequency documented in old diary in Nagasaki and 20th century reanalysis data V.3 (Slivinski et al., 2019) for the years from 1836/37 to 1867/68. As a result, we detected that interannual variation of snowfall frequency in Nagasaki is negatively correlated with variation of Aleutian low intensity. Interannual variation of snowfall frequency is also strongly correlated with development of East Asian trough and strength of westerly jet over East Asia. Moreover, interannual variation of snowfall frequency seems to relate to El Niño and Southern Oscillation (ENSO) over the tropical Pacific Ocean. All of these features were also detected for the present day (1970/71-2014/15). On the other hand, we could not find significant correlation between Siberian high intensity and interannual variation of snowfall frequency. Surface pressure data in Siberia was not used for data assimilation in 20th century reanalysis data. Lack of significant signal over Siberia is probably caused by few observed pressure data over this area.

Keywords: Historical weather records, Snowfall frequency, Reanalysis data