



A temporary warm period of Japan in 1850s - 1860s

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The 1850s-1860s were corresponding to the end of the Little Ice Age, and mountain glaciers in European Alps shrank rapidly around this period. However, global mean temperature variations do not show prominent increasing trend during 1850s and 1860s (IPCC 4th report). The reason for this might be caused by the insufficient global coverage of meteorological observations in this period.

The purpose of this study is to clarify the existence of a temporary warm period in Japan reconstructed from temperature observations and historical weather records in early 19th century. Both summer temperature reconstructions in Tokyo (1721-2010) and temperature readings using thermometers indicated hot summer episodes in 1850s and 1860s. Warm winters often appeared in this period. Changes in atmospheric circulation patterns over the Northern Hemisphere might have highly related to the hemispheric temperature anomaly patterns in this period.