

Estimation of meteorological conditions at Dome Fuji from 1995 to 2017 using in-site observation data and reanalyses data

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Observational meteorological data at Dome Fuji (77°19'01"S, 39°42'12"S, 3810 m a.s.l.) in 1995-1997, 2003 and reanalyse data (ERA-Interim by ECM-WF and JRA55 by JMA) were compared. We found that correlatin coefficients between obsrvational air temperature and ERA-Interim ranges 0.73 to 0.95 for four yeras' monthly average (1995, 96, 97 and 2003), and 0.40 to 0.82 for JRA 55. Thus, we estimated the air temperature at Dome Fuji from 1998 to 2002, and from 2004 to 2017 by using the relation between obeservational results and ERA-Interim. Figure 1 shows temperature variation at Dome Fuji from January 1, 1995 to December 31, 2017.

We will talk about other meterological elements (atmospheric pressure, wind speed and wind direction) at Dome Fuji for 1995 to 2017.

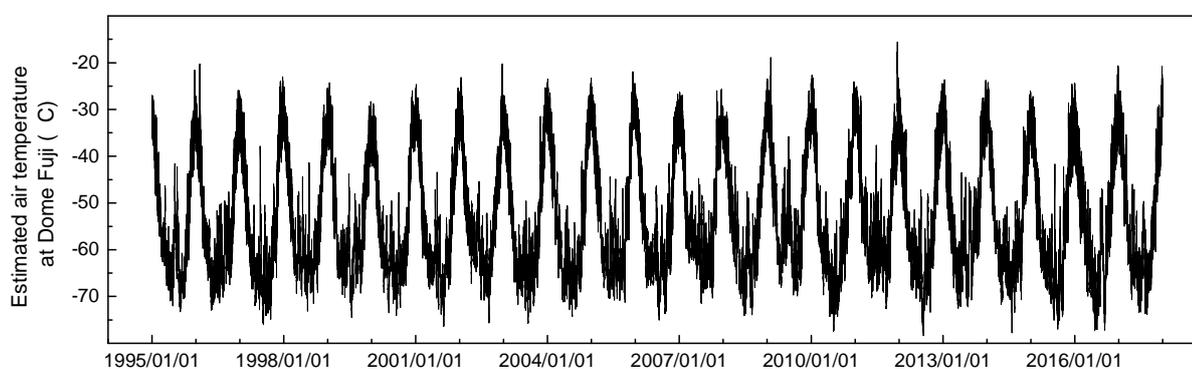


Fig. 1 Reconstructed air temperature at Dome Fuji using in-situ observatinal data and reanalyses data of ERA-Interim. Reanalyses data of ERA-Interim (1998 to 2002, 2004 to 2017) are corrected using in-situ obseravational data.

References

Mae, H., "Estimation of meterological conditions at Dome Fuji using reanalyses data". Graduation thesis, Department of Civil and Environmental Engineering, Kitami Institue of Technoogy, 53pp, 2019.