

## Predictability of stratospheric circulations during recent sudden warming events

# Tomoko Ichimaru[1]; Toshihiko Hirooka[1]; Hitoshi Mukougawa[2]

[1] Dpt Earth Planetary Sci., Kyushu Univ.; [2] DPRI, Kyoto Univ.

<http://fx.geo.kyushu-u.ac.jp/top.html>

It is well known that the variability of stratospheric circulations is magnified during stratospheric sudden warming events. In this study, we extract 12 events occurring in recent five Northern Hemisphere winters to investigate the predictability of such stratospheric circulations during sudden warming events using the Japan Meteorological Agency (JMA) ensemble one-month forecast data. Each predictable period is estimated on the basis of the growth of root-mean-square errors in geopotential height field. It is found that the mean predictable period is about 10 days and the variance is fairly large. In order to understand the large variance, we categorize the events in terms of the time evolution, i.e., 'first events' and 'sequential events'. The first events are those occurring under cold and undisturbed condition in early winter, while the sequential events are those occurring successively after preceding ones. As a result, it is shown that the mean predictable period of the first events is 1.5 times as long as that of the sequential events.