Variability of global SLP fields of pressure according to NCEP/NCAR reanalysis

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Interannual variability of a global field of a sea level pressure (SLP) P by data from reanalysis is analyzed.

Figure 1 shows the distribution of the SLP standard interannual deviations δP from NCEP/NCAR reanalysis (Kistler et al., 2001).

Significant variations of the δP are noted over oceans in high and middle latitudes during winter. Large δP values changes are associated with the centers of action in the atmosphere. Extreme δP values are associated with the oceanic centers of action in high latitudes of the Northern Hemisphere.

Figure 2 shows differences of the δP between two periods (1987-2006 and 1948-1967). Large changes are noted for high latitudes in both hemispheres. Decrease of the δP has been noted for the Antarctic and Greenland region, in midlatitude of the Pacific Ocean, the coast of Greenland and Pacific Ocean. Increase of the δP has been noted for the central part of East European plain of Russia.

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References

Kistler R., Kalnay E., Collins W., et al. The NCEP 50-year reanalysis: monthly means CD-ROM and documentation. Bull. Amer. Met. Soc. 2001. V82. P.247-266.

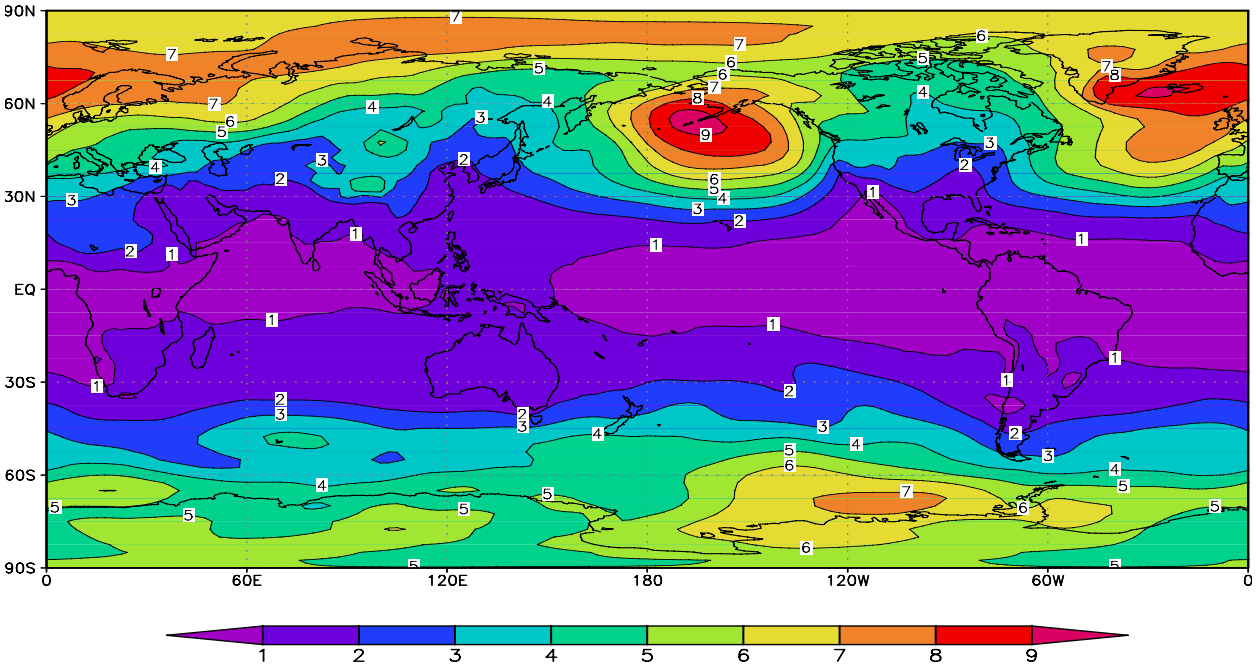

Fig. 1. Spatial distribution of the standard interannual deviation δP (SD) of the SLP in winter (a) from NCEP/NCAR reanalysis for the period 1948-2006.

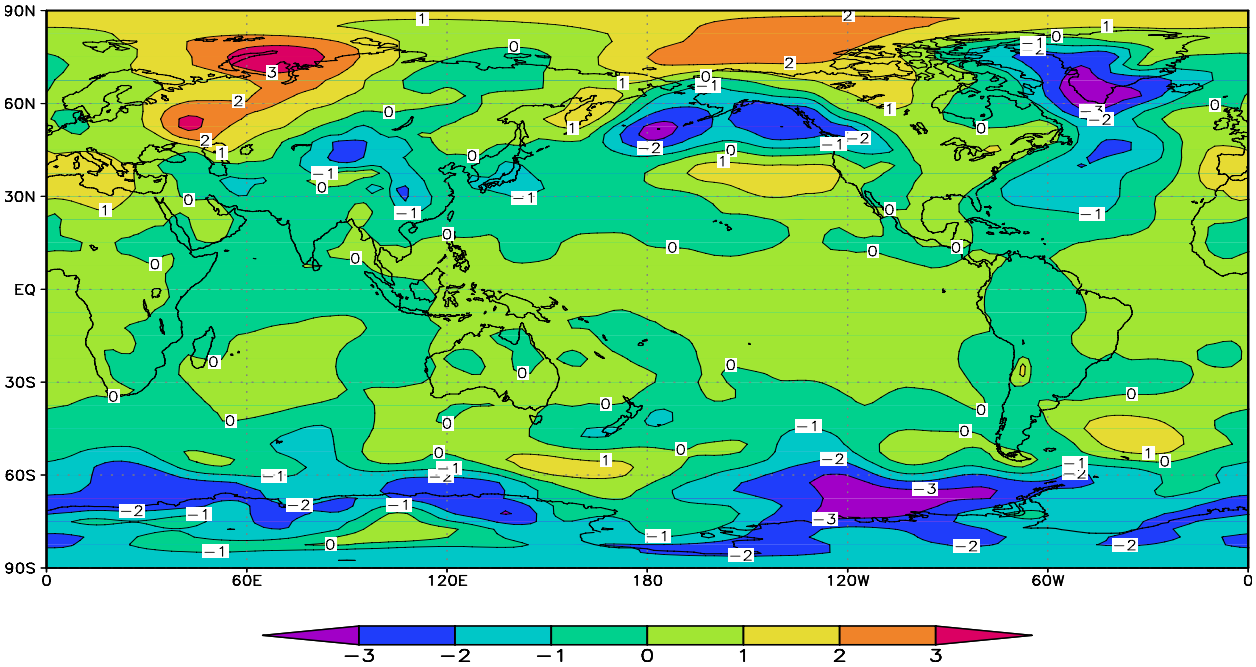

Fig. 2. Spatial distribution of the differences SD between two periods (1987-2006 and 1948-1967) (b) from NCEP/NCAR reanalysis for winter.