

VARIATION OF EURASIAN SNOW COVER EXTENT AND
NORTHERN HEMISPHERE SURFACE AIR
TEMPERATURE (ABSTRACT)

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Correlations between the snow cover extent and northern hemisphere mean surface air temperature (P. D. JONES *et al.*: J. Appl. Meteorol., 25, 161, 1986) were analyzed for 1967–1987. Snow cover extent in Central Asia (35–65°E, 25–70°N), which correlates better with the interannual variation of snow cover extent over the whole continent than that in other regions, was chosen to represent the Eurasian snow cover (October, December, February and April). For snow cover extent data, the NOAA/NESDIS Northern Hemisphere Snow and Ice Chart was used.

Negative correlations were found between the NHT in late summer to autumn ($r = -0.67$ for September) and the October snow cover extent. The so-called Eurasian Pattern (J. M. WALLACE and D. S. GUTZLER: Mon. Weather Rev., 109, 784, 1981) detected in the atmospheric circulation (500 mb) in autumn seems to be largely responsible both for the large extent of snow cover and the low NHT.

Positive correlations were found between the April snow cover extent and the NHT in the following winter to autumn period ($r = 0.72$ for January). On the other hand, two other relations are found. 1) Negative correlations between April snow cover in central Asia and the following Indian summer monsoon rainfall ($r = -0.52$). 2) Negative correlation between April snow cover extent and the sea water temperature of the western tropical Pacific the following January (T. YASUNARI and Y. SEKI: submitted to J. Meteorol. Soc. Jpn., 1991). These three correlations may indicate that these lag correlations show a possible link among Eurasian snow cover, tropical sea surface temperature (SST) and NHT.

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