

**SEASONAL AND INTERANNUAL VARIATIONS OF AMUR RIVER DISCHARGE
AND THEIR RELATIONSHIPS TO LARGE-SCALE ATMOSPHERIC PATTERNS AND
MOISTURE FLUXES**

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Using reanalysis data, we investigate the relationship of Amur River discharge and vertically integrated atmospheric horizontal moisture flux. The discharge has two peaks, one in spring and the other in autumn. Comparison of the moisture flux to the discharge indicates that the spring peak is supplied by the flux in previous seasons, whereas the autumn peak is supplied by the summertime flux. A northward flux associated with storms in the previous autumn and winter contributes to the spring discharge. The autumn discharge is supplied by a northward flux associated with the Asian summer monsoon and by an eastward flux originating from evaporation in Eurasia.

Interannual variation is also investigated. The strong summer monsoon strengthens the summer flux convergence, resulting in anomalously large discharge in autumn. The strong winter monsoon wind with a dry air mass activates evaporation. The anomalously large spring discharge is related to the warm phase of the Arctic Oscillation. This suggests that the rapid melting of snow and frozen soil contributes to the spring discharge. These results indicate that the monsoon plays an important role in the freshening of the Okhotsk Sea. This work is partially based on a paper by Tachibana, Oshima and Ogi (2008) in *Journal of Geophysical Research*.