

Differences in the atmospheric circulation for the low-flow and high-flow periods of the Selenga River

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Precipitations are the main source of earth surface moistening, determining the conditions of the majority water objects. Investigations of causes of their variations are the important scientific and applied problem.

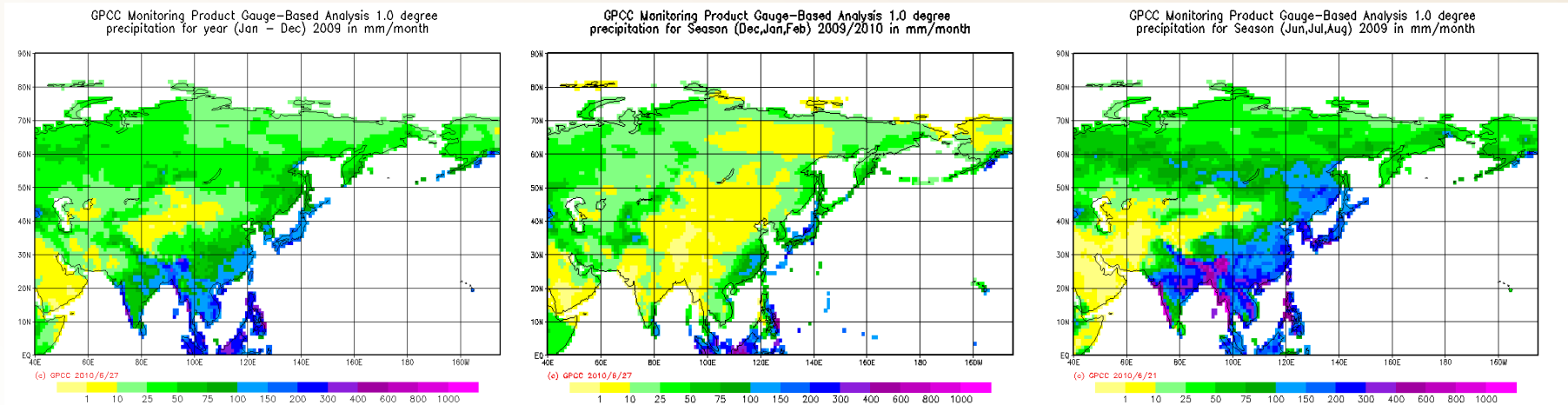
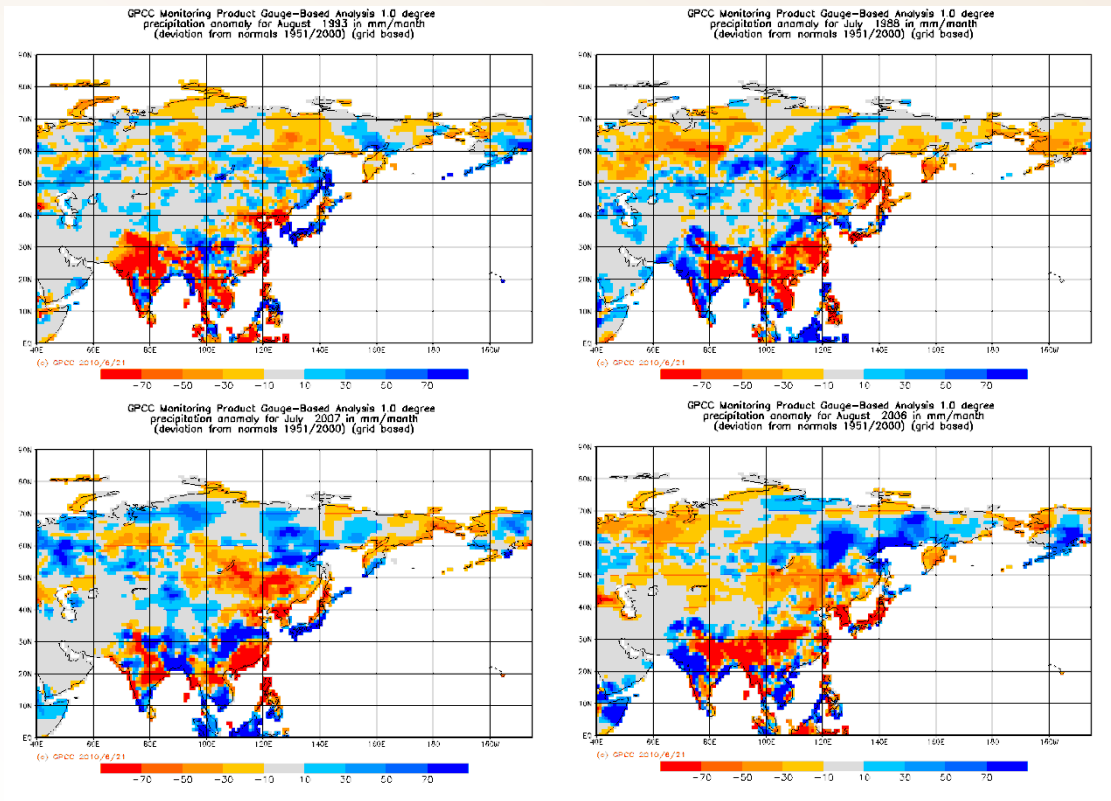


Fig. 1 Average annual and seasonal distributions of precipitations over Asia.



In **Fig. 2** the distributions of the precipitations anomalies at the periods of extremely low and high Selenga water content are presented. As can be seen, the precipitation anomalies in the Selenga River basin are the parts of the large-scale changes over the whole of the Central and East Asia.

The map of the Selenga River basin



The Selenga River water content was high in August 1993 and in July 1988, and extremely low in August 2006 and in July 2007.

Fig. 2 Anomalies of atmospheric precipitations in the periods of high and low water content of the Selenga River

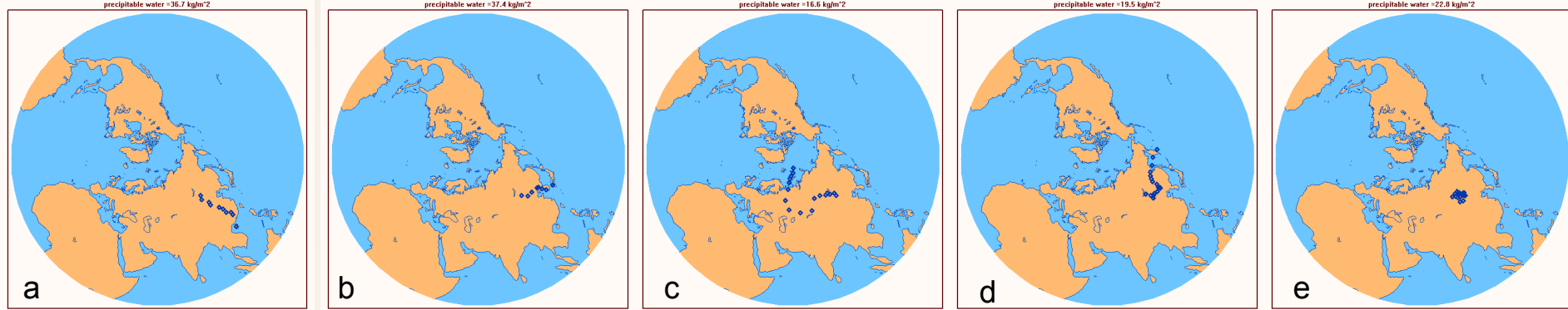


Fig. 3 Predominant trajectories and total precipitable water
 a, b – high water content periods, c, d, e – low water content periods

Conclusions

1. For the Selenga River the main factor of the outflow changes is the variations of summer precipitations over the river basin.
2. Variations of summer precipitations over the Selenga River basin are the part of the large-scale changes of the atmospheric circulation affecting the most of Eurasia.
3. The differences between atmospheric circulations in the low and high river water content periods are manifested in the different directions of the air propagation over the Selenga River basin and in the different moisture of the air incoming. Apparently in the high water content periods there are prevail the circulation forms with southern meridional intrusions along the eastern Asia coasts.
4. One of the effective tool for diagnostics of atmospheric circulation variations may be the trajectories calculations, allowing simultaneously estimates of the direction of atmospheric intrusion and the characteristics of air incoming, in particular the total water content.

A scenic photograph of a sunset over a body of water. The sun is low on the horizon, partially obscured by dark, silhouetted mountains. The sky is filled with soft, golden light and scattered clouds. The sun's rays create a bright, shimmering reflection on the water's surface, extending from the horizon towards the foreground. The overall mood is peaceful and serene.

**Thank You for
attention!**

Модельные и косвенные оценки изменения количества атмосферных осадков:

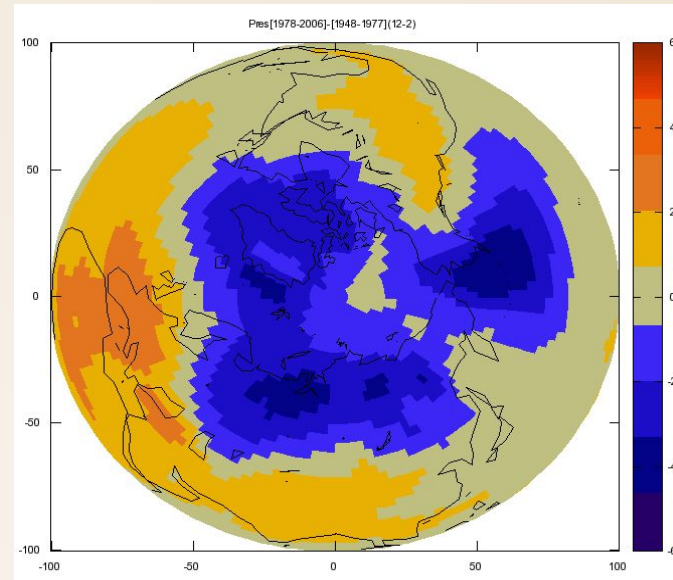
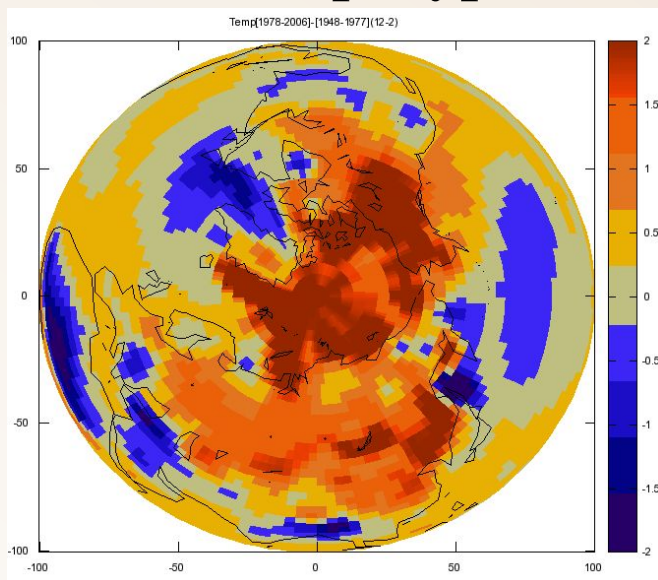
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Карты изменения климатических показателей между периодами 1948-1977 и 1978-2006 гг.

Температура

Давление

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