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# **ТОРФЯНИКИ ЗАПАДНОЙ СИБИРИ И ЦИКЛ УГЛЕРОДА: ПРОШЛОЕ И НАСТОЯЩЕЕ**

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## HYDROLOGICAL REGIME OF SIBERIAN WETLANDS FROM SATELLITE AND IN-SITU OBSERVATIONS

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Variability of hydrological processes in the Western (Poluy, Nadym, Pur and Taz river basins or PNPT) and Central (Yakutsk region) Siberia is studied at different temporal (from multi-year to seasonal) and spatial (from local to regional) scales. We use satellite radar altimetry (T/P, Jason, ENVISAT and SARAL/AltiKa), radiometry (SMOS, SSM/I) in combination with the in situ observations and the recent field studies done in 2008-2013 (Zakharova et al., 2011; 2014).

We present the variability of water level (from radar altimetry) and surface properties (from altimeter waveforms parameters) for different studied watersheds. Seasonal and interannual variability of water abundance is studied using radar altimetry and radiometry.

We have identified three main types of wetland water regime characterised by: 1) spring inundation

and following deep drainage with/without secondary peak in autumn; 2) spring inundation and low summer variation; 3) spring inundation with medium summer drainage and second autumnal peak.

Our results show that seasonal amplitude of water level variation for northern part of Western Siberia from altimetry is 0.7-1.5 m for lakes and 0.2-0.5 m for bogs. This represents seasonal variation of wetland water storage of 480 mm for non-permafrost and 130 mm for permafrost-affected zones.

In the northern part of the Western Siberia thermokarst lakes (arctic ponds) dry out, and it is still not clear in what degree it is related to climate change and/or human activity, and what are the mechanisms - subsurface infiltration or surface drainage. There is also a significant difference in evolution of thermokarst lake complexes between Western Siberia and more arid Central Siberia.

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