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### AGU Fall Meeting 2009

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#### **The Influence of Seasonal Climatic Parameters on the Permafrost Thermal Regime in West Siberia**

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Statistical correlations between seasonal air temperatures and snow depths and active layer depths and permafrost temperatures were analyzed for tundra (Marre-Salle) and northern taiga (Nadym) sites in Western Siberia. Interannual variations in active layer depth in the tundra zone correlated with the average air temperature of the current summer, and in peatland and humid tundra, also with summer temperatures of the preceding 1–2 years. In the northern taiga zone, the active layer depth related to current summer air temperature and to a lesser extent, to spring and/or winter air temperatures. Variations in summer permafrost temperatures at 5–10m depth were correlated with spring air temperatures in the current and preceding 1–2 years. The weather regime during the preceding 1–2 years, therefore, reinforced or weakened ground temperature variations in a given year. Overall, the most important factors influencing the permafrost regime were spring and summer air temperatures, and in one case snow depth. However, statistical links between meteorological and permafrost parameters varied between the tundra and northern taiga zones and among landscape types within each zone, emphasizing the importance of analyses at short temporal scales and for individual terrain units.

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