



# THE LABORATORY OF TREE-RING RESEARCH

presents a talk by

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## *Arctic Amplification: Do rivers matter? A tree-ring case study of seasonal streamflow changes in the Yenisei River Basin (Russia)*

Wednesday, November 17, 2021 - 12:00pm to 1:00pm

Room: Zoom Only

The Yenisei River is the largest contributor of freshwater and energy fluxes among all rivers draining to the Arctic Ocean. We quantify larch tree growth response to river discharge at the upper reaches of the Yenisei River in Tuva, South Siberia. Two regression models built from tree-ring width chronologies are applied to reconstruct winter (Nov–Apr) and annual (Oct–Sept) discharge. This new hydrological archive doubles the length of the instrumental discharge record at the Kyzyl gauge and resets the temporal background of discharge variability back to 1784. The reconstruction finds a remarkable 80% upsurge in winter flow over the last 25 years, which is unprecedented in the last 214 years. Accelerating permafrost warming in South Siberia and widespread forest fires are likely forcing the flow changes.