Poster

**Altitude-dependencies and driving processes of daily streamflow trends in Norway**

Amalie Skålevåg1

1 Institut für Umweltwissenschaften und Geographie, Universität Potsdam, Karl-Liebknecht-Straße 24-25, 14476 Potsdam

Contact: skalevag1@uni-potsdam.de

**Abstract**

Mountainous regions are experiencing more rapid temperature changes than lower altitudes, which impacts the hydrology of these regions particularly through cryosphere and seasonal snowpack changes. To this end, hydrological trends in historical records from 112 Norwegian catchments have been assessed to highlight the impact of changes in snowmelt and rainfall on streamflow and the hydrological regime, focusing on (1) the altitude dependencies of these trends and (2) to what extent trends in streamflow can be explained by snowmelt, rainfall and temperature trends. A high-resolution trend analysis approach was used to produce daily resolved trends for all 112 catchments, enabling the detection of seasonal-specific trends and changes to the hydrological regime. The prestine and near-natural catchments are divided between two runoff regions, located east and west of the central Norwegian mountains. The regions have different prevailing hydroclimates, but cover similar altitude ranges (0-2000 m.a.s.l.), allowing for insights into the hydrological response of catchments with different hydrological regimes to rising temperatures in recent decades. Initial results are consitent with existing literature on mountainous regions with seasonal snowpack, showing a significant seasonal warming coinciding with an earlier onset of the spring freshet in streamflow, which corresponds with snowmelt trends. The timing of this signal is clearly altitude depedent, while trend magnitude displays no consistent correlation with altitude. Further results on trend altitude dependencies and consistencies of streamflow trends with driving processes will be presented.

**Keywords:** streamflow trend, climate change, altitude dependence, driving processes