

Seminar “Ocean, Ice and Atmosphere”,  
Institute of Environmental Physics (IUP), Univ. Bremen  
Date: 04-June-2024, 12:15  
Place: Building GW2, Room B2890

## Multi-century global glacier equilibration under different warming levels

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Glaciers outside of the Antarctic and Greenland ice sheets have been the strongest cryospheric contributor to sea-level rise in the 20th century and will likely remain the strongest contributor in the 21st century, independent of emission scenario. Glaciers regulate seasonal water availability in several densely-populated basins and are associated with increasing geohazards in many high mountain regions. Since glaciers are responding to changes in local atmospheric conditions only slowly, the currently observable glacier retreat is only a fraction of the mass loss that is already committed, but not yet realized, through anthropogenic forcing of the climate system. In an effort coordinated through the Glacier Model Intercomparison Project, the global community of glacier modellers has quantified the equilibrium response of glaciers to different levels of warming, as well as the temporal evolution towards the equilibrium.