

## **The hydrological role of glaciers in the Atacama Desert**

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Water is a critical resource in the northern and central regions of Chile, as the area supports more than 40% of the country's population, and the regional economy depends on agricultural production and mining, which are two industries that rely heavily on a consistent water supply. Due to relatively low rates of rainfall, meltwater from snow and ice bodies provides most of the annual water supply in these areas. Consequently, accurate estimates of runoff from the cryosphere are crucial for predicting current supply rates and future projections. While snow is generally a larger contributor of freshwater, during periods of drought ice bodies provide a significant source. In this talk, I will describe the results of ongoing field and modelling studies which aim to determine melt and sublimation rates of snow and ice bodies, as well as quantify the contribution of glaciers and rock glaciers to streamflow in the semiarid Andes. I will outline our advances as well as methodological considerations guiding our current and future research plans, focusing predominantly on glaciers and rock glaciers.