



"Climate change and hydrological cycle in continental cryospheric areas: lessons learned and future perspectives from three and a half continents".

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Rivers watered from the continental cryosphere in several areas worldwide are a lifeline for a population of billions, and source of energy under hydro-power exploitation, and yet their dynamics, water budgets, and response to global change are little studied, and poorly understood.

It is expected that accelerated melting of glaciers from the *water towers* of the world, in response to diffuse warming, and more erratic rainfall patterns, will provide more variable hydrological cycle, with larger floods in the melting season, and diffused droughts otherwise.

However, while large literature worldwide provides conjectures of the potential state and fate of these mountains, experimental investigation and ground based know-how are lagging behind, given the harsh environmental, and climatic conditions of these high mountains.

This 1-hour seminar narrates of our 10 years activity which has brought us from the Italian Alps to the roof of the world in the monsoonal Himalayas, and the dry deserts of Karakoram, the iconic volcanic Caucasus, and the Andes of South America, seeking for the water into the cryosphere.

I will illustrate how we gathered precious field data, including snow cover, ice thickness and melt, ice and water flows, which we then used to set up credible glacio-hydrological models, and eventually quantify the water budgets of these areas, unraveling the hidden *nexus* between the cryosphere, climate, water, and energy.

Then, we used climate projections from the IPCC to answer the question whether future ice cover, and hydrological cycle will change significantly, and to spark brain storming on adaptation strategies.

Are the *water towers* of the world indeed at stake ? Attend the seminar to discover.

Bologna, Viale Berti Pichat 6/2 - Meeting Room (Second Floor). June 18, 11.00 hours

