

GLASS Vision and Mission

The GEWEX Vision

Water and energy are fundamental for life on Earth. Fresh water is a major pressure point for society owing to increasing demand and vagaries of climate. Extremes of droughts, heat waves and wild fires, as well as floods, heavy rains, and intense storms increasingly threaten to cause havoc as the climate changes. Other challenges exist on how clouds and aerosols affect energy and climate. Better observations and analysis of these phenomena, and improving our ability to model and predict them, will contribute to increasing information needed by society and decision makers for future planning.

GLASS role: Better representation of the Earth System by understanding the role of land.

The GEWEX Mission

To measure and predict global and regional energy and water variations, trends, and extremes, such as heat waves, floods, and droughts, through improved observations and modeling of land, atmosphere, and their interaction, thereby providing the scientific underpinnings of climate services.

GLASS role: Identify and improve modeling of land-surface processes and land-atmosphere interactions to support the GEWEX Mission.

2017 GLASS Highlights

- **Local Land-Atmosphere Coupling (LoCo):** The LoCo working group is going strong after being established over a decade ago to focus on the goal of accurately understanding and modeling coupled land-atmosphere processes. A BAMS review article led by the LoCo WG was accepted Dec 2017 that covers the first decade of LoCo with an eye towards future work, and is already getting attention via early online release (re: Pielke email).
- **PLUMBER:** Additional research & analyses spinning off from the PLUMBER experiment (published by GLASS co-authors in 2015) has multiplied, and several external parties have enquired about driving & taking part in a 2nd phase of the experiment. The first paper is past 60 citations in 2 years. Details on planning and a timeline for the follow-up. A PLUMBER2 planning meeting is scheduled after the GLASS panel meeting in Canmore, May 2018. Initial results of bringing ILAMB into the PALS environment are encouraging, and this work has some funding for the next year to continue. Ideally be used for PLUMBER2.