

Local Land-Atmosphere Coupling (LoCo): Local land-atmosphere coupling metrics

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Land-atmosphere interaction is a research area that is rapidly developing. After the well-known GLACE experiments and various diagnostic studies, new research has evolved in modeling and observing the degree of land-atmosphere coupling. Questions of interest are: how much is coupling related to local versus "remote" processes, what is the nature and strength of coupling, and how does this change (e.g. for different temporal and spatial scales, geographic regions, surface hydrology, ecosystems and vegetation cover, and changing climates). As such, this is an important issue on both weather and climate time scales. The GEWEX Land-Atmosphere System Study/Local Coupling (GLASS/LoCo) project seeks to understand this role of land atmosphere coupling in the evolution of surface fluxes, and land and atmospheric state variables including clouds. The GLASS/LoCo working group is investigating diagnostics to quantify land-atmosphere coupling, exploring such coupling with in situ observations as well as model output in order to assess model behavior in being able to reproduce "proper" coupling.