



Vegetation patterns in drylands: evapotranspiration fluxes and their importance for the climate system

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In arid and semi-arid ecosystems, local vegetation-soil moisture feedback mechanisms are important for vegetation self-organization. Vegetation spatial patterns, such as spots, stripes and gaps, are frequently observed. At larger scales vegetation exerts a direct role on water and energy fluxes, which influence directly local precipitation recycling, particularly in drylands.

To evaluate the interactions between vegetation self organization, on the small scale, and land-atmosphere feedbacks, on larger scales, it is crucial to model accurately the evapotranspiration fluxes. In this contribution, we discuss a new explicit-space model for vegetation dynamics in water-limited ecosystems, including two soil layers. The model is suitable for evaluating how evapotranspiration fluxes are modified by the presence of patterns, and to establish the climatological importance of related modifications in local soil-vegetation feedbacks.