



LIAISE: An observational campaign designed to enable multiple modelling experiments to support GEWEX initiatives and address some WCRP grand challenges

- GLASS:
 - 1) LSM benchmarking (led by Martin Best)
 - 2) Dry-down (led by Simon Osbourne)
 - 3) Representation of heterogeneity (led by Martin Best)
- GLASS / GASS:
 - 1) Land-atmosphere coupling (led by Jenn Brooke)
 - 2) Heterogeneity driven mesoscale circulations (led by Maria Antonia Cortes)
- GLASS / GHP:
 - 1) Closing the terrestrial water cycle (led by Martin Best)
 - 2) Impact of irrigation on long term water resources (led by Aaron Boone)



WATER FOR
THE FOOD BASKETS
OF THE WORLD



WEATHER AND
CLIMATE EXTREMES

1) LSM benchmarking

Science Objective:

- Benchmarking of LSMs for various surfaces including:
 - Layer of dead vegetation
 - Sparse vegetation
 - Irrigated versus non-irrigated



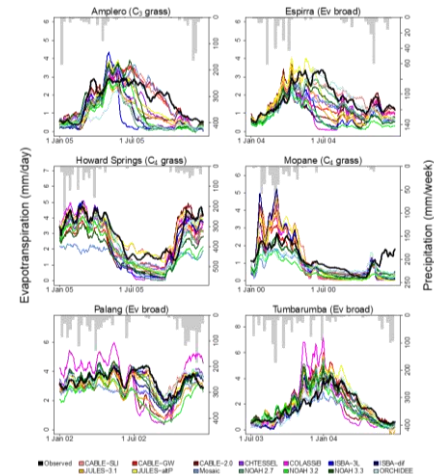
Courtesy of Joan Cuxart



2) Dry-down

Science Objective:

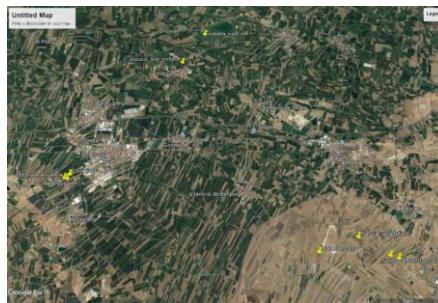
- Determine how LSMs represent the surface energy balance during the dry down of soil moisture



3) Representation of heterogeneity

Science Objective:

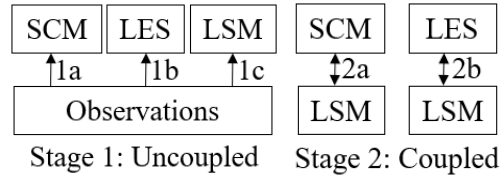
- Determine how surface heterogeneity impacts on landscape scale surface fluxes in LSMs



Ukkola et al., 2016. Environ. Res. Lett., 11, doi:10.1088/1748-9326/11/10/104012

1) SCM & LES Intercomparison Framework

Supersite 1: Irrigated site (La Cendrosa) (CNRM/Meteo France)



LIAISE SCM&LES modeling intercomparison protocol extends on the previous DICE project conducted under a joint activity within the Global Land Atmosphere System Study (GLASS) and Global Atmospheric System Studies (GASS) projects.

Research Questions:

What is the impact of surface fluxes (dry & irrigated) on the boundary layer evolution?

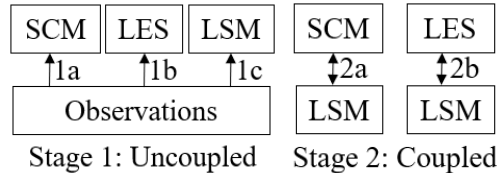
How well can SCM&LES models simulate the boundary layer evolution for irrigated and dry surfaces?

Can we understand land-surface/atmosphere interactions?

Assess the model error contribution:

- 1) errors in surface fluxes
- 2) errors in the boundary layer parameterization due to errors in the vertical distribution of heat and moisture

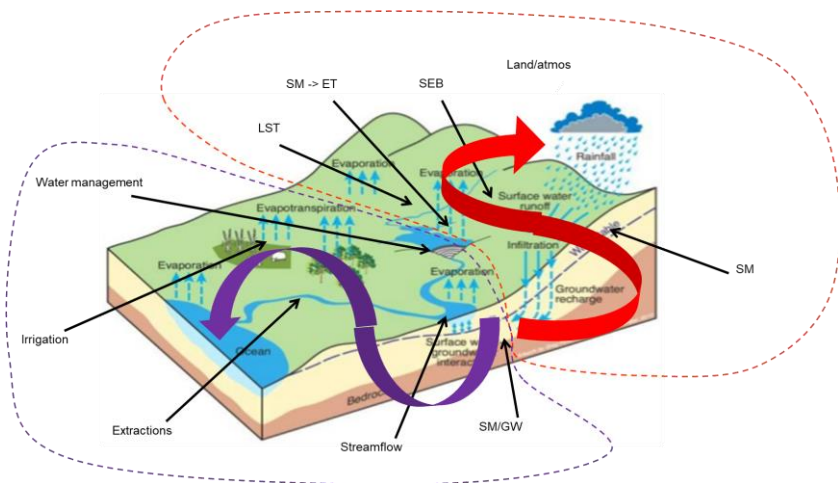
Supersite 2: Natural site (Els Plans) (UKMO)



1) Closing the terrestrial water cycle

Science Objective:

- To evaluate LSMs and hydrological models for all aspects of the terrestrial water cycle



2) Impact of irrigation on long term water resources

Science Objective:

- To understand the long term impact of irrigation on the water and energy cycle in the Lleida region of the Ebro river catchment

