Met Office

Demonstrating the impact of modelling coupled irrigation over the Iberian semi-arid environment

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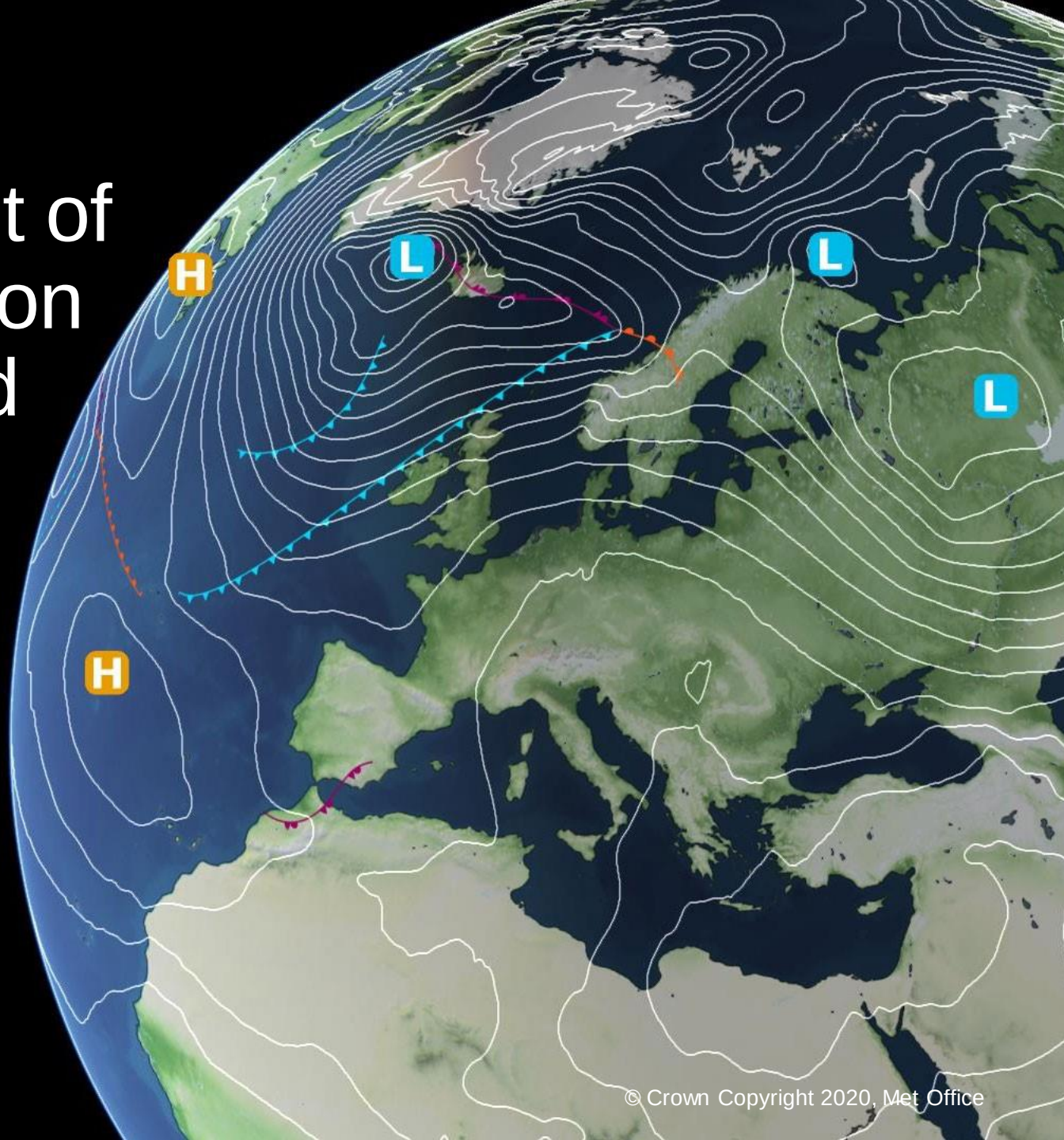

LIAISE

WCRP World Climate Research Programme
GEWEX
Met Office
LMD
IRTA RESEARCH & TECHNOLOGY FOOD & AGRICULTURE
HyMeX HYdrological cycle in Mediterranean EXperiment
SAFIRE
meteo.cat
Servei Meteorològic de Catalunya
METEO FRANCE
cnrs
UIB
Universitat de les Illes Balears

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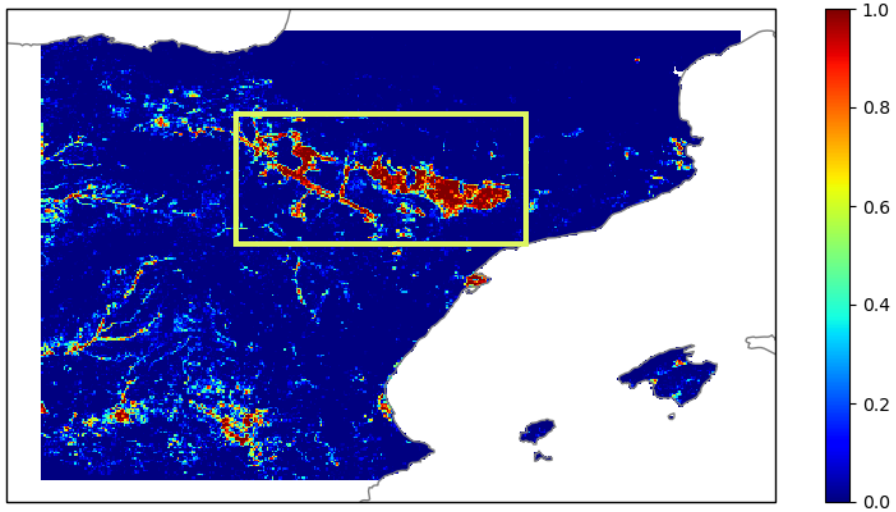
Met Office Impacts of irrigation in UM Simulations

Aims:

- Improve our ability to model a heterogenous irrigated land surface
- Understand the impact of irrigation on the terrestrial water fluxes, surface fluxes and the atmospheric evolution in UM simulations.

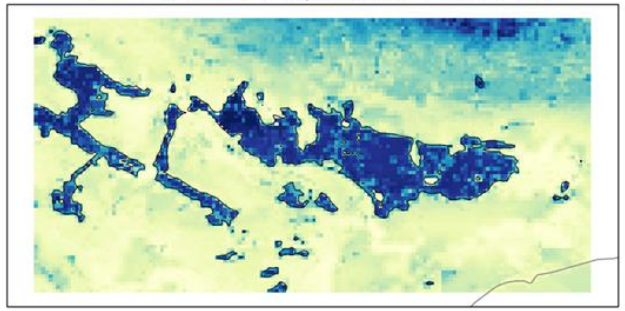
➢ Testing irrigation code using the UM Regional Nesting Suite over a 2.2km domain centred around the LIAISE field campaign area of north-eastern Spain

Irrigated Fraction Ancillary

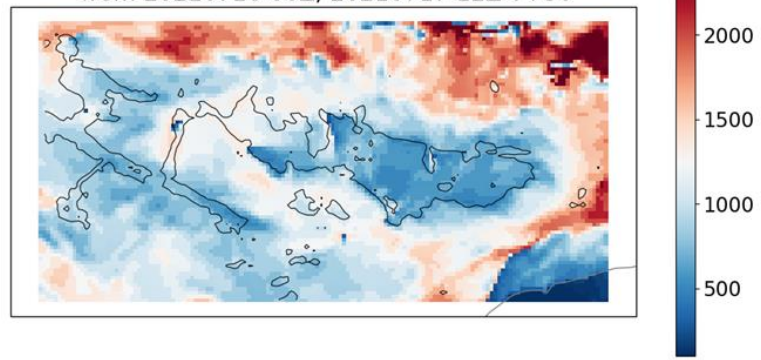


Ancillary derived from ESA Climate Change Initiative (CCI) land cover dataset

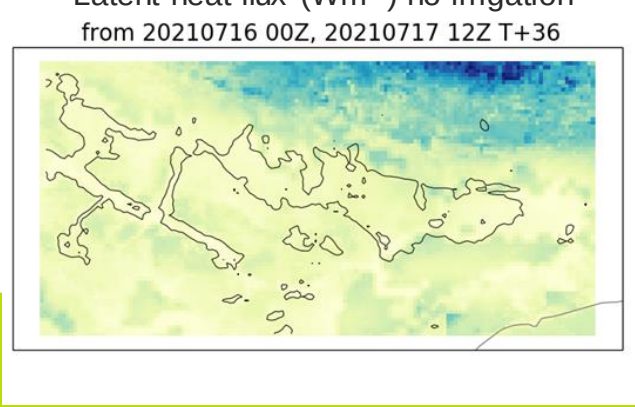
Latent heat flux (Wm^{-2}) with irrigation
from 20210716 00Z, 20210717 12Z T+36



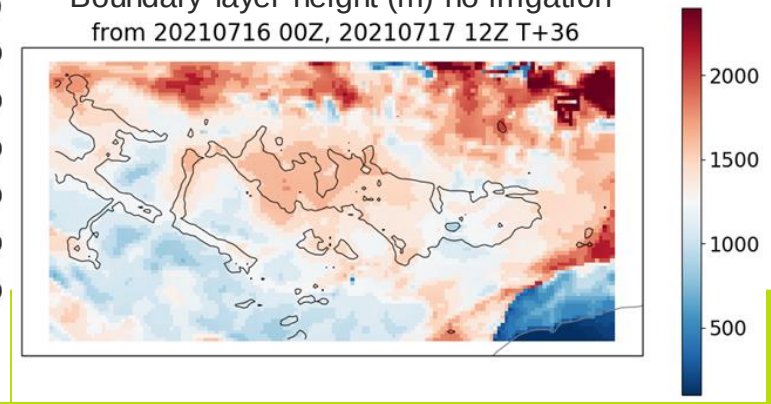
Boundary layer height (m) with irrigation
from 20210716 00Z, 20210717 12Z T+36



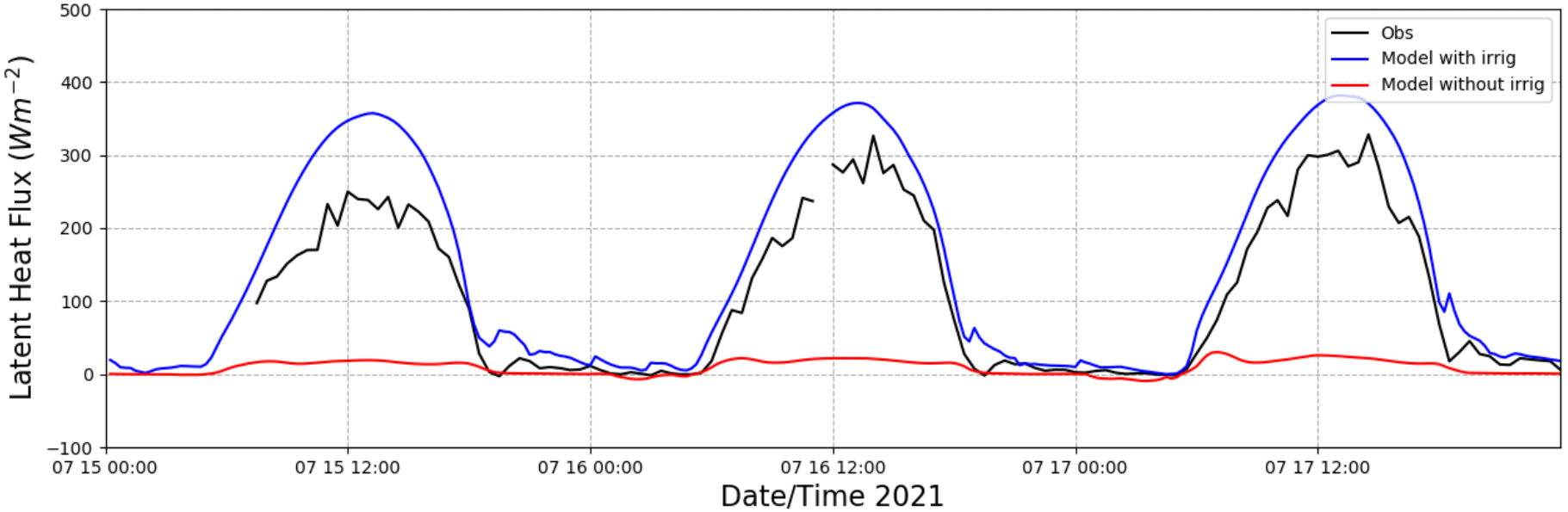
Latent heat flux (Wm^{-2}) no irrigation
from 20210716 00Z, 20210717 12Z T+36

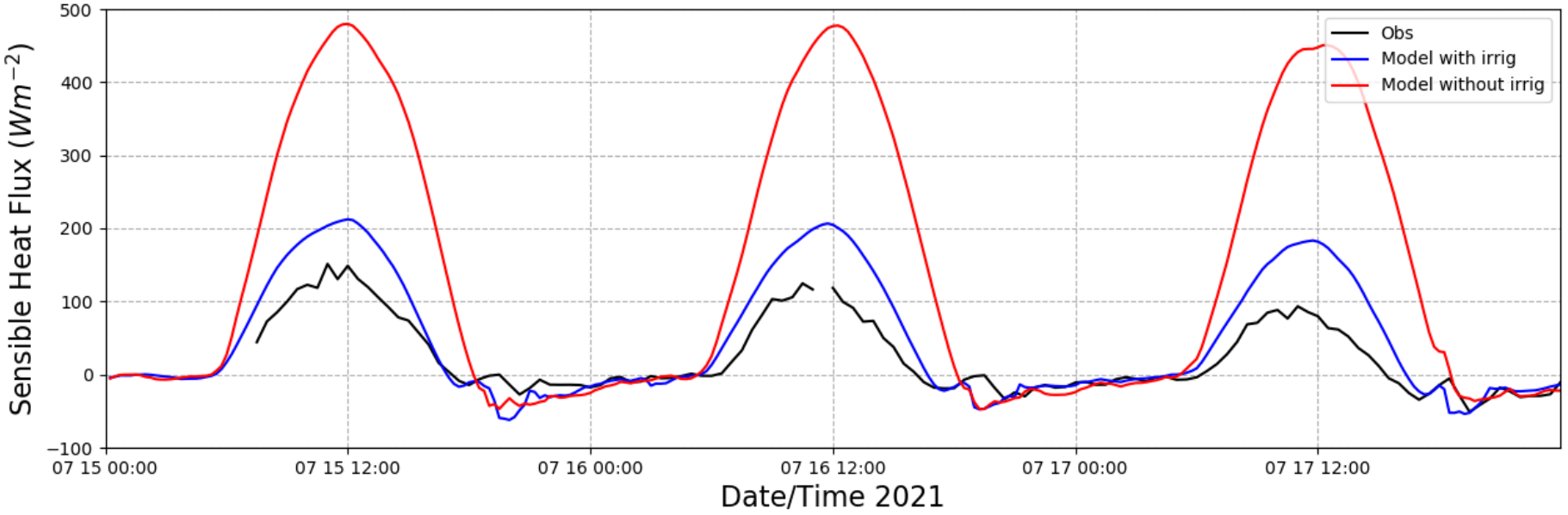


Boundary layer height (m) no irrigation
from 20210716 00Z, 20210717 12Z T+36



Met Office Latent & Sensible Heat Flux, La Cendrosa





Irrigated site

Fast growing Alfalfa crop

Subjected to flood irrigation:
~10th, 23rd – 25th

Observations
Model with irrigation
Model without irrigation

IOP days 15th/16th/17th July 2021