JULES Hydrology Update

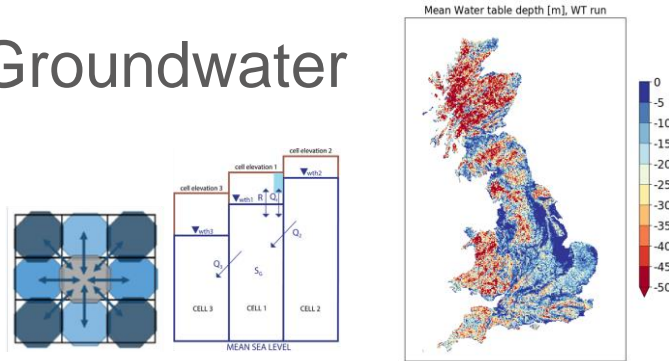Sonja Folwell & Nic Gedney

Code Development

- River grid initialisation (Maggie Hendry/Doug Clark)

- River routing and inundation scheme, CaMa-flood (Yamazaki et al, 2010); Toby Marthews & Doug Clark https://code.metoffice.gov.uk/trac/jules/ticket/1417

  - Introducing a new option for floodplain hypsometry to include Cama-Flood ancillaries of flood plain profiles derived from STRM30

- A new groundwater scheme (JULES- DGW) based on Leaf-Hydro, currently being tested Africa-wide. Alberto Martinez & Doug Clark

  - Reworking code to enhance parallelization

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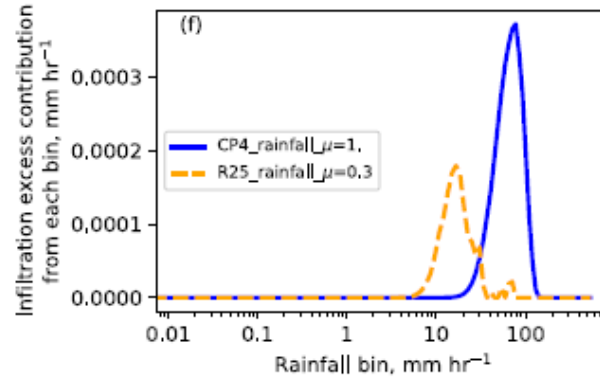ssf@ceh.ac.uk

JULES in Hydro-JULES

Hydro - JULES Breakout group (Liz Cooper)

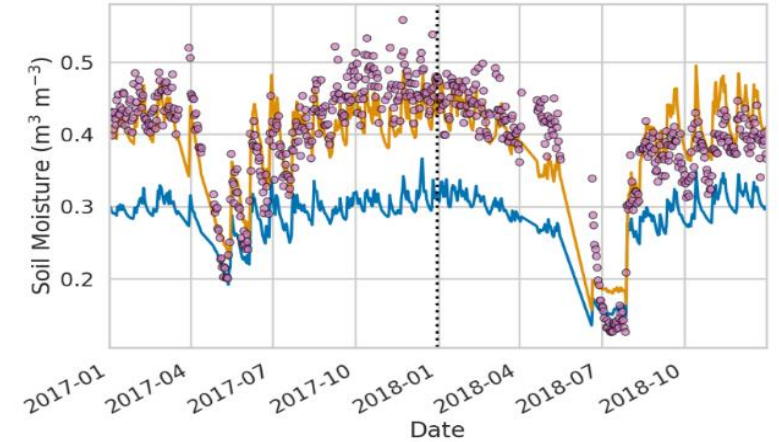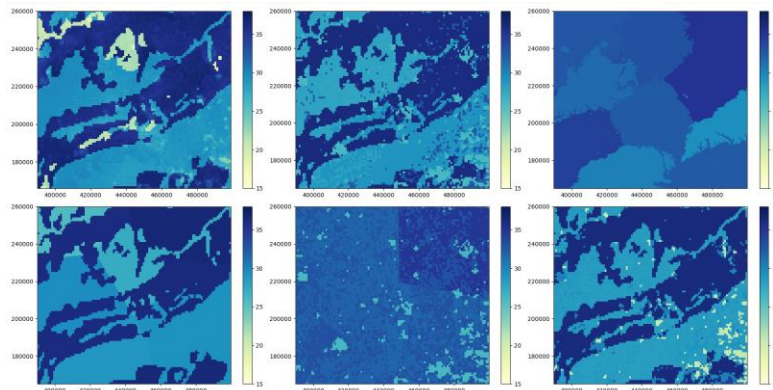Hydro-JULES programme continuing for a further 4 years
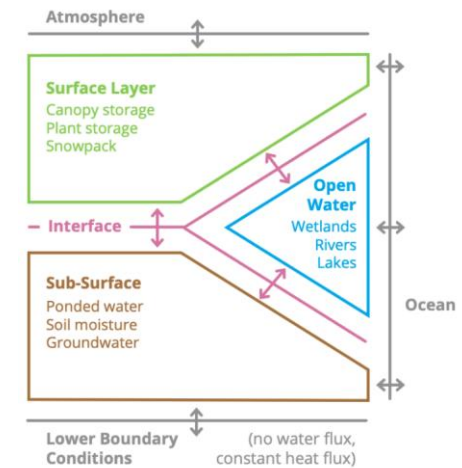
Groundwater
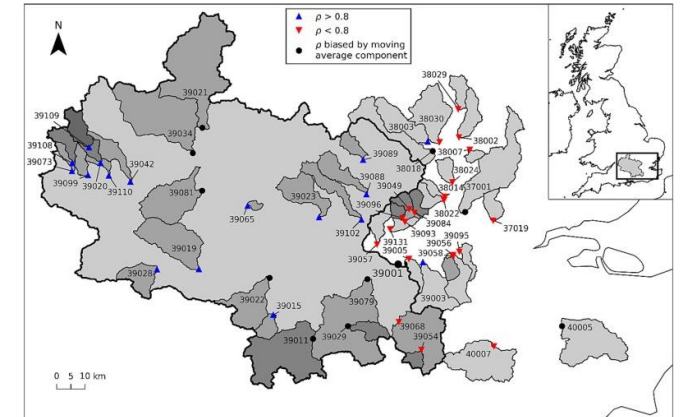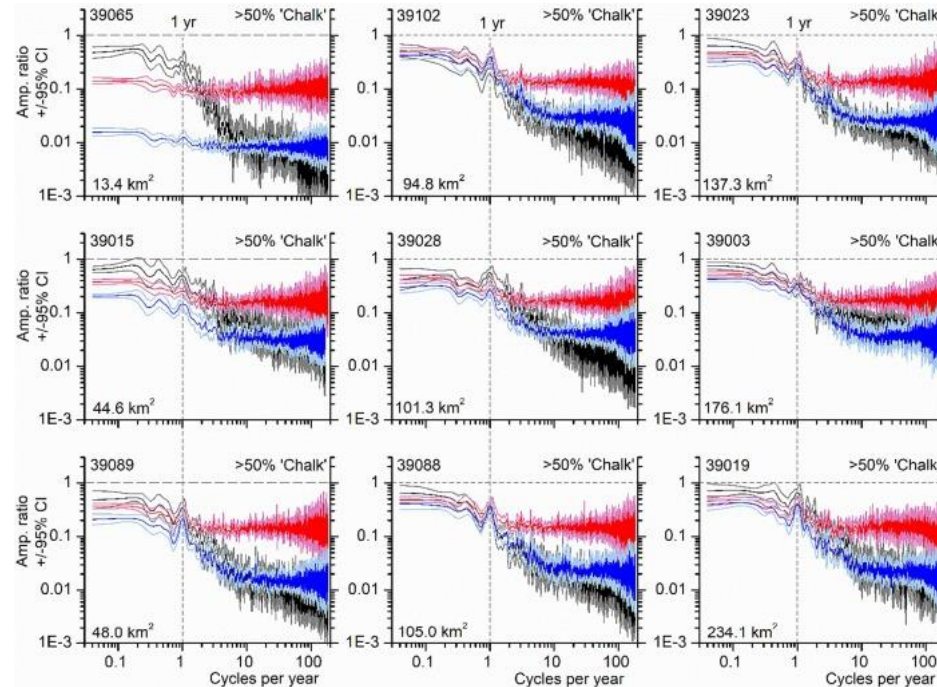
km-scale processes

Data Assimilation

Clustering

Frameworks

Improving JULES hydrology in the UK

- Spectral analysis to understand the geological controls on discharge across the Thames

- Testing new bedrock satcon to better represent the chalk dominated catchments

- Segolene Berthou– testing this alternative satcon ancillary in the winter testbed,

Graham P. Weedon, Emma L. Robinson, John P. Bloomfield, Stephen Turner, Emily J. Crane, Martin J. Best, (2023).
Geological controls of discharge variability in the Thames Basin, UK from cross-spectral analyses:
Observations versus modelling, Journal of Hydrology, https://doi.org/10.1016/j.jhydrol.2023.130104.

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