Hydro-JULES

UK CEH

Hydro-JULES Summer School 2021

Modelling Hydrology and Global change

12-16th July 2021

All sessions are to be held on the video conferencing platform Gather.town except the Keynote talks, which will be on Zoom. For instructions on how to use Gather and a link for entering the online space, please see https://www.tobymarthews.com/gather.html.

All times are UK time (**UTC+01:00**): Green shading = Morning session, Blue shading = Afternoon session

MON - 12th July	**INTRODUCTION TALKS 9-10am**: Presentations by Simon Dadson and Victoria Barlow/Toby Marthews/Marcia Spencer • **09:00-9:30** SD: Welcome to the Hydro-JULES Summer School, aims and objectives • **9:30-10:00** VB/TM/MS: Q&A / Introduction to Hydro-JULES, the planned training this week, Gather.town and Datalabs • **10:00-10:30** Q&A • **10:30-11:00** Screen break • **11:00-12:30** First half of a Grand Tour of the Hydro-JULES project in a series of 10 min 'speed' talks. • **12:30-13:30** Lunch (UK time) • **13:00-15:30** Second half of Grand Tour • **15:30-16:00** Screen break • **16:00-17.30** Explore resources uploaded into the Gather space • **17:30** Finish
TUES - 13th July Theme: The Water Cycle Above and at the Surface	**ZOOM KEYNOTES 9-10am**: Pre-recorded presentations followed by a live Q&A by Jamie Hannaford, Eleanor Blyth, Ross Morrison and Hollie Cooper. • **09:00-9:30** Controls of evaporation from above and below the surface (EB, RM and HC). • **9:30-10.00** The importance of observations in understanding past, present and future hydrological variability (JH) • **10:00-10:30** Q&A Session (for both talks) on Gather.town • **10:30-11:00** Screen break • **PARALLEL 1**: Demonstration of JULES on JASMIN led by Toby Marthews *(JULES & Rose room)* • **PARALLEL 2**: Introduction to Jupyter notebooks and Datalabs led by Matt Fry *(Datalabs room)*

	• **12:30-13:30** Lunch Break (UK time) • **13:30: 15:30** Virtual Field Trip: JASMIN – a globally unique data analysis facility (Poppy Townsend, Matt Pritchard, Phil Kershaw) *(Meet @Jasmin Room)* • **15:30-16:00** Screen break • **16:00-17:30** Virtual Field Trip continued *(Meet @Jasmin Room)* • **17:30** Finish
WEDS- 14th July Theme: The water cycle at and below the surface	**ZOOM KEYNOTES**: Pre-recorded presentations followed by a live Q&A by Andrew Hughes and Alberto Martínez-de la Torre • **09:00-09:30**: Modelling groundwater at the British mainland scale - so far so good? A summary of the current progress and the challenges to come (AH) • **09:30-10:00**: Groundwater interactions with the land surface fluxes. Introduction of a Dynamic GWater Scheme into the JULES LSM (AM) • **10:00-10:30**: Q&A Session (for both talks) on Gather.town • **10:30 – 11:30** Screen break • **PARALLEL 1**: A demonstration of the new modelling framework developed by Hydro-JULES led by Thibault Hallouin, Rich Ellis *(Meet @ Modelling Framework room)* • **PARALLEL 2**: Practical based on JULES point runs led by Toby Marthews. *(Meet @ JULES & Rose room)*
	• **12:30-13:30 Lunch Break (UK time)** • **13:00-15:30** Virtual Fieldtrip: How we measure land surface to atmosphere fluxes across our world-leading national network of eddy covariance flux towers (Ross, Hollie, Alex) *(Meet @ 'Flux tower' table, Wittenham Room)* • **15:30-16:00** Screen break • **13:00-15:30** Virtual Fieldtrip Continued *(Meet @ 'Flux tower' table, Wittenham Room* • **17:30** Finish
THURS -15th July Theme: Applications & Engagement	**ZOOM KEYNOTES 9-10am**: Pre-recorded presentations followed by a live Q&A by Liz Cooper, Katie Facer-Childs, Maliko Tanguy and Michael Eastman • **09:00-09:15** Combining JULES with observations to improve soil moisture estimates (LC) • **09:15-09:30** Soil moisture monitoring from space (MT) • **09:30-09:45** Data Assimilation for Hydrological Forecasting (ME) • **09:45-10.00** Improving Winter Streamflow Forecasts with the North Atlantic Oscillation Index (KF) • **10:00-10:30** Q&A Session (for all talks) on Gather.town • **10:30-11:00** Screen break • **PARALLEL 1**:Practical based on JULES gridded runs led by Toby Marthews *(Meet @ JULES & Rose room)*

	• **PARALLEL 2**: More on Jupyter notebooks and Datalabs led by Matt Fry *(Meet @ Datalabs room)* • **12:30-13:30 Lunch Break (UK time)** • **13:30-15:30** Virtual Fieldtrip - River discharge measurement technologies and techniques. An exploration of the tools and methods for measuring river discharge, including floods and droughts and the challenges posed by a changing climate (Ramesh/Nick Everard/Emily Trill) *(Meet @ 'ArcBoat' table, Wittenham Room)* • **15:30-16:00** Screen Break • **16:00-17:30** Virtual Fieldtrip - River discharge measurement Continued • **17:30** Finish
FRI - 16th July	**TOPICS FROM THE FLOOR** • **09:00-10:30** Topics chosen during the week to be discussed. • **10:30-11:00** Screen break • **PARALLEL 1:** Jupyter notebooks and Datalabs: post processing and data sharing. (Matt Fry) *Meet @ Datalabs room* • **PARALLEL 2:** Virtual Poster event *Meet @ Poster Room* • **12:30-13:30 Lunch Break (UK time)** • **13:30-15:30** Workshop - Troubleshoot materials presented during the week with Toby Marthews. Students allowed to bring forward their own examples and real-world problems *(Meet @ JULES & Rose Room)* • **15:30-16:00** Screen break **16:00-17:30** Final words and close (Simon Dadson) • **17:30** Finish