

Integrated models for long-term planning in a changing world

Wednesday 08 November 2017

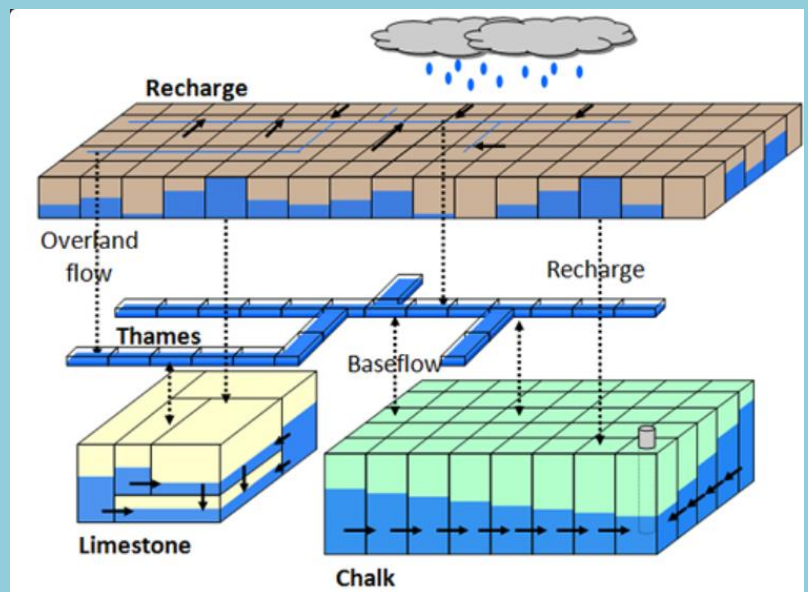
The Priory Rooms, 40 Bull Street, Birmingham, B4 6AF

Environmental models, including groundwater flow and transport models, have traditionally been developed to address specific, narrowly defined issues. As these issues become broader and scientific understanding of the interconnectivity of different systems grows, models become more complex in an attempt to include multifaceted system processes. Model integration, i.e. linking existing individual models, is widely used as an alternative to building very complex multi-process models or frameworks.

A variety of methodologies have been developed, including object-oriented concepts, component-based modelling techniques and modelling frameworks, as well as the emerging use of integrated modelling platforms and metadata support for modelling semantics.

Associated with the development of these new modelling tools comes a requirement for better quantification of the error embedded in individual models and understanding how it is propagated through the modelling framework.

This workshop will present different approaches to integrated modelling and provide examples of applications that have been, or are being, developed. The focus will be on groundwater flow and transport modelling, including examples from water resources planning, consideration of surface water- groundwater interactions as well as the representation of groundwater in large-scale Earth System Models. Error propagation and uncertainty will be discussed within the wider context of model coupling.



Registration

Costs for the meeting are **£57 (GeoSoc fellow + retired)**, **£87 (Non-fellow)** and **£37 (students)** which includes lunch.

Registration and payment for this event must be made in advance through the Geological Society's webpage [link](#). The deadline is 15 October 2017.

For further information please contact one of the meeting convenors:

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Adam Taylor (adam@gwmodels.co.uk)

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Programme

	0930 Arrival & Tea/Coffee
	1000 Talk 1: Model integration: challenges, current approaches and a glimpse of the future A Hughes (BGS) + case studies Will Rust (Atkins) & Chris Jackson (BGS)
	1045 Talk 2: Invited Speaker - Being pragmatically uncertain: lessons learnt from UncertWeb and MUCM Dan Cornford (Ashton University)
	1125 Talk 3: Water Resources East: dynamic integration of groundwater and surface water models in an innovative water resources simulator Lindsay McMillan (Mott MacDonald) & James Tomlinson (Atkins)
	1205 Questions + Discussion
	1220 Instructions for Modellers' Fair
LUNCH	1230 Lunch Break
	1330 Modellers' Fair
	Modelling nitrate from the soil zone to abstraction boreholes - linking several flow and transport models Jane Dottridge & Geert Schut (Mott MacDonald)
	Are we over-complicating our models? Towards a more efficient and robust representation of sub-surface hydrological processes in Earth System Models Rafael Rosolem, Mostaquimur Rahman & Thorsten Wagener (University of Bristol), Stefan Kollet (Research Center Jülich, Germany)
	Coupled modelling of groundwater and surface water in Suffolk fen peat using FEFLOW/MIKE11 Jo Thorp (Atkins)
	Surface Water Accounting Model, SWAcMOD – linking surface flow and recharge processes to our groundwater models. Alastair Black (Groundwater Science)
	UK Water Resource Planning – what about groundwater? Aodhín McBride & Chris Counsell (HR Wallingford)
	Hertfordshire Chalk groundwater model: lessons learnt from combining existing regional models Victoria Price, Holly Clark & Jane Dottridge (Mott MacDonald), Adam Taylor (Groundwater modelling solutions), Alastair Black (Groundwater Science)
	Integrated hydrogeophysical modelling for contaminated land risk assessment Michael Tso & Andrew Binley (Lancaster University), Oliver Kuras (BGS)
	Challenges associated with defining groundwater recharge in arid climates, and implications for model coupling Stuart Daley (WSP PB)
	Integrated hydrological and water quality modelling using MIKE 11 and MIKE SHE: the River Thames , Sam Bishop, Heather Streetly & Phil Hubbard (ESI), Nick Elderfield, Mark Bailes, Mona Sassner, Jesper Goodley Dannisøe, Erik Mårtensson & Torsten Vammen Jacobsen (DHI)
	1510 Tea/ Coffee break

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	1540 Unconference taster This session explores a new meeting format where topics are proposed and voted on by the meeting participants. For information on how to participate, please see information below.
	1640 Website launch
	1655 Closure

Unconference Taster

This session explores a new meeting format – the unconference- in which the discussion topics are defined by the participants prior to/ during the event. This means that there is no pre-set programme, instead, questions are proposed and voted on by the meeting participants using a simple app called **Slido**.

Slido can be accessed through your app store or internet browser and allows participants to easily submit their questions and to vote on their favourite question in a live poll. The most popular questions will be selected during the session and offered to the audience for discussion.

Obviously, this will only work if questions are being posted / voted on, **so please bring your phone and participate by following these steps:**

- 1) Use your computer / smartphone and connect to the wifi
- 2) Open the web browser and go to **www.slido.com**
or
install the **slido** app
- 3) Enter the event code: **#GWMF2017**
- 4) In the app, you can post questions and/or vote for the ones that you would like to discuss

Questions can be posted/ voted on from 03rd November until during the session. As proposer, you will have the option to champion your question at the event, i.e. to introduce it and to start the discussion. If you wish to do so, please enter your name after the question. Otherwise, just post as **Anonymous**.

For further information on the use of Slido, please see <https://www.youtube.com/watch?v=EHLXtDFRGT8>.

Registration

This meeting is expected to be well attended so it is recommended that you register early to avoid disappointment. **Places are limited to 85 participants** which will be allocated on a first come-first served basis.

Costs for the meeting are **£87 (Non-fellow), £57 (GeolSoc fellow + retired) and £37 (students)** which includes lunch.

Registration and payment for this event must be made in advance. The deadline is **15 October 2017**.

For details on how to register and pay, please visit the Geological Society's web page for this event at

<https://www.geolsoc.org.uk/GSL-HG-15th-GWMF-Workshop>

All payments must be made through the Geological Society. If you require more information about booking please contact Georgina Worrall (Email: georgina.worrall@geolsoc.org.uk / phone +44 (0)207 434 9944).

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