

JULES: introduction

Olivier Boucher, Met Office Hadley Centre

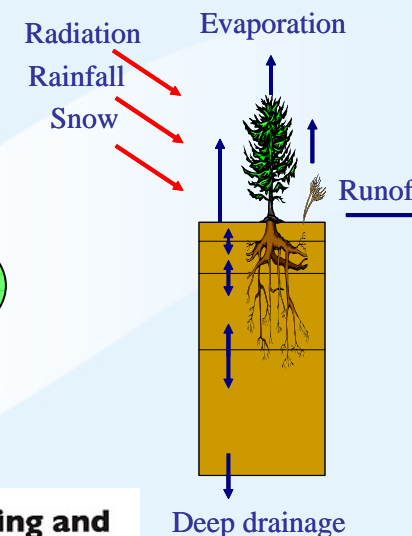
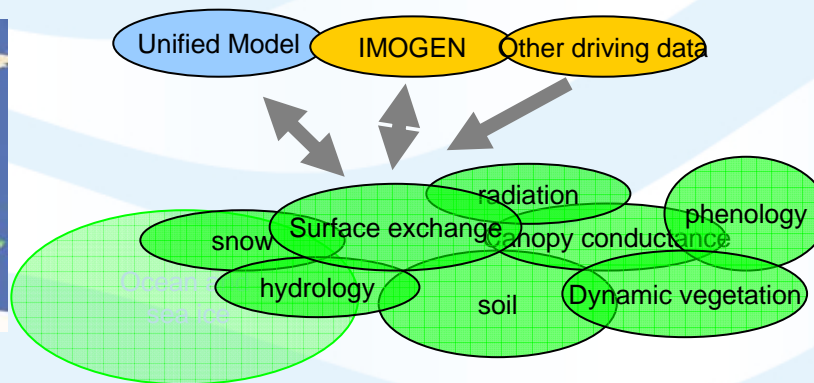
First JULES Science meeting

Exeter University

28-29 June 2007

What is JULES?

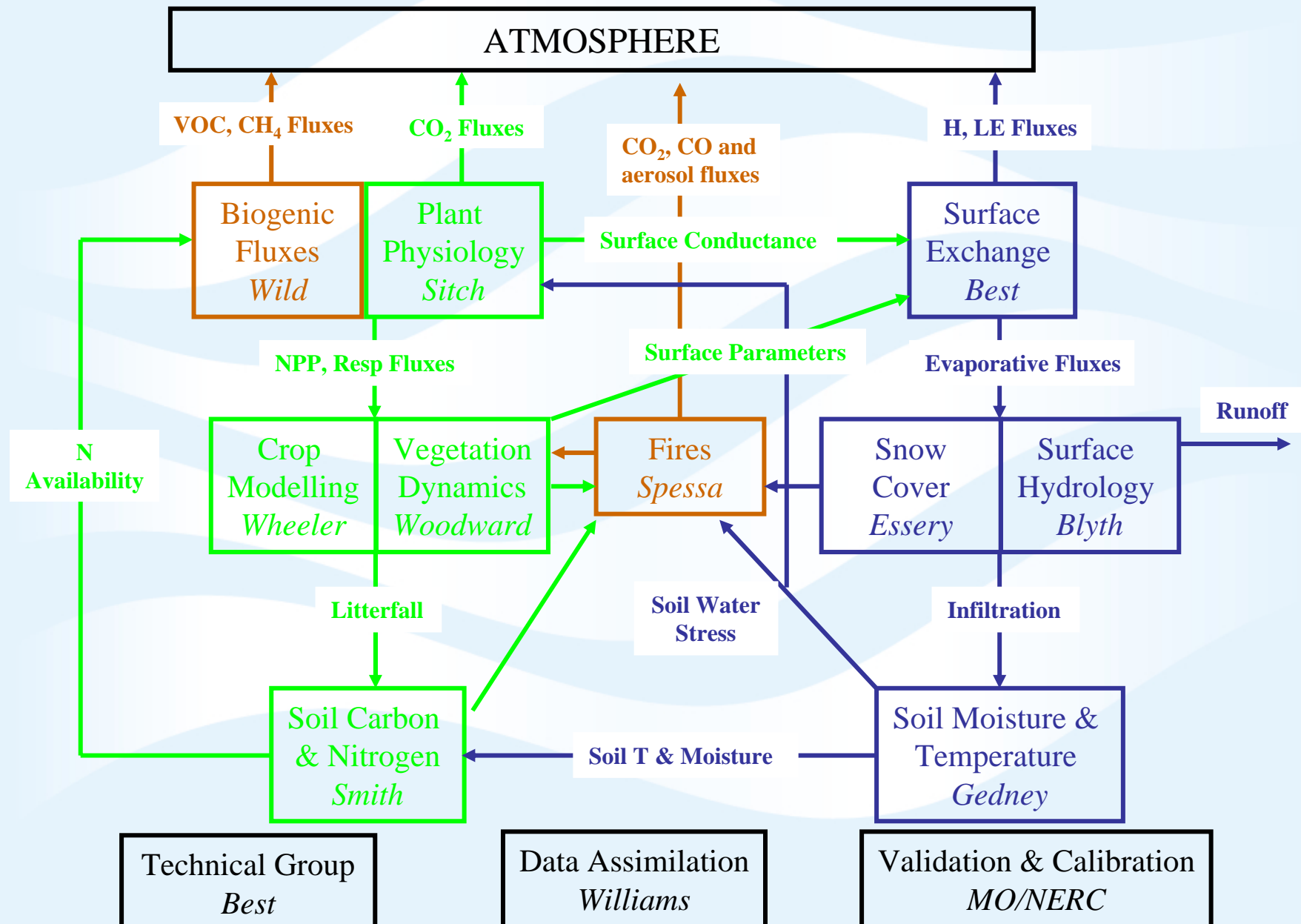
- JULES (Joint UK Land Environment Simulator) is a community land surface scheme.
- It builds upon the MOSES II and TRIFFID models developed at the Met Office.
- JULES is designed as a modular model which can incorporate various sub-models of land surface processes (e.g. snow model, river routing, dynamic vegetation model).
- JULES is expected to be used for a variety of meteorological, hydrological and climate applications from scales ranging from local to global.



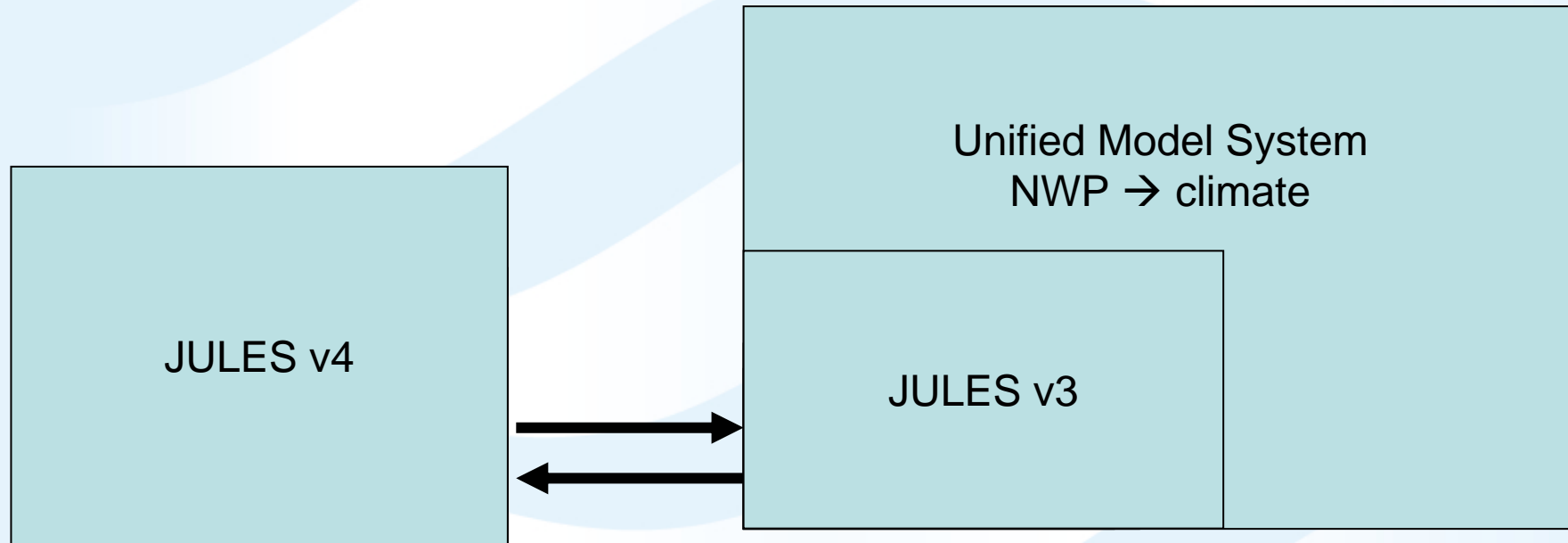
Governance of JULES

- A growing community of users and developers
- A management committee comprised of M. Best, E. Blyth, O. Boucher, P. Cox, R. Essery, R. Harding, C. Prentice, P.L. Vidale, and I. Woodward.
- Theme leaders
- A JULES office
- Consortium agreement / IPR issues are being worked on.

Structure of JULES



JULES: off-line or on-line?

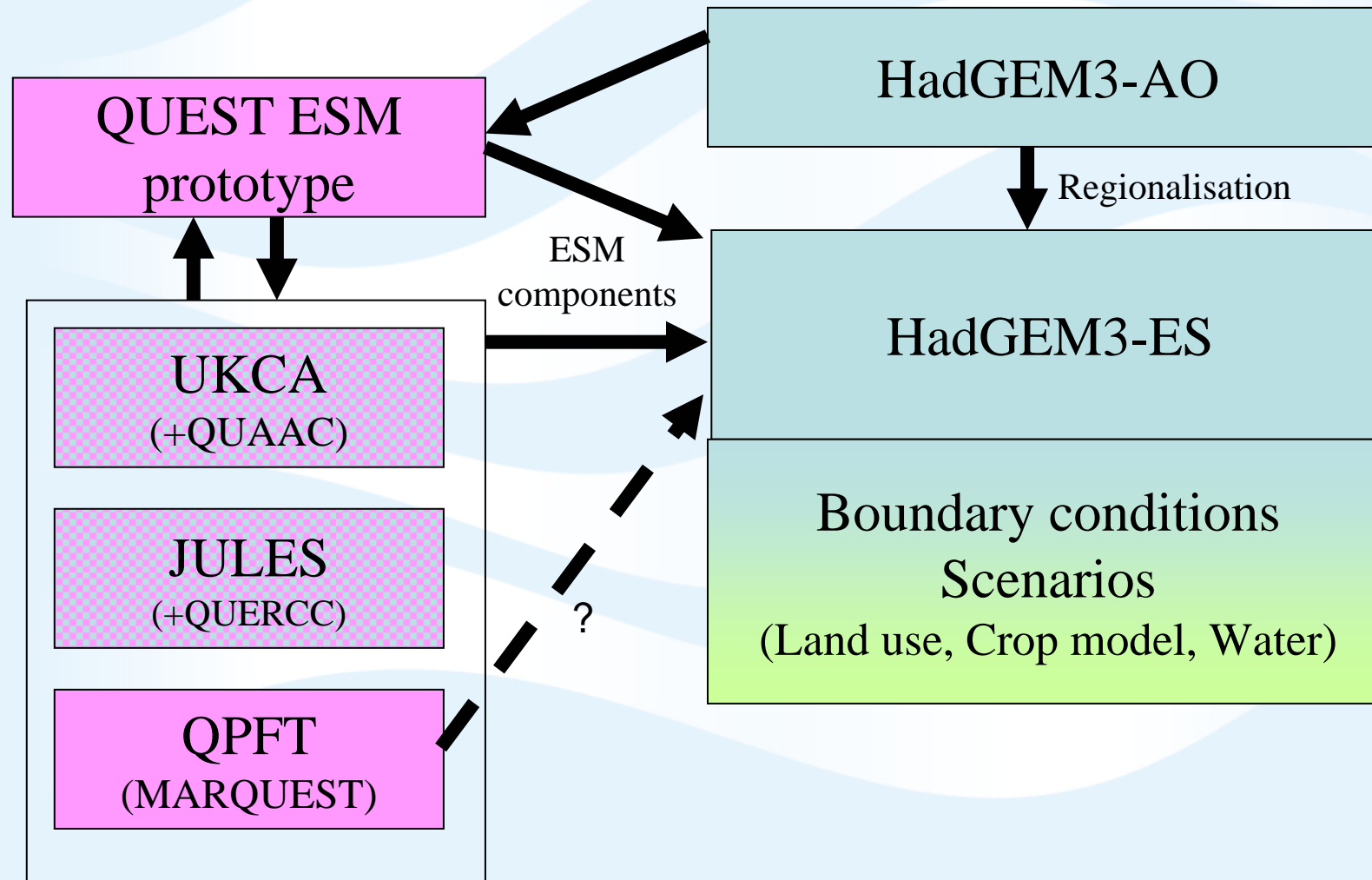


Off-line model but with a strong link to the UM

UM code management system (FCM)

JULES code management system (FCM)

HadGEM2-ES, HadGEM3 and QUEST ESM



Agenda – Day 1

11:00 – 12:30	General session	
11:00 – 11:15	JULES: introduction	Olivier Boucher
11:15 – 11:30	New features in JULES version 2	Doug Clark
11:30 – 11:45	Land surface modelling in the Australian Community Climate Earth-System Simulator (ACCESS)	Ying Ping Wang
11:45 – 12:00	The CSIRO Atmosphere Biosphere Land Exchange (CABLE) model for use in climate models and as an offline model	Eva Kowalczyk
12:00 – 12:15	Surface exchange, technical development and validation:	Martin Best
12:15 – 12:30	Modelling hydrology in JULES; past, present and future	Eleanor Blyth
12:30 – 13:30	Lunch	
13:30 – 15:30	Plant physiology, Vegetation dynamics and Crop modelling	
13:30 – 13:35	Introduction	Stephen Sitch
13:35 – 13:50	Roots, shoots and leaves: The origin of GLAM-JULES	Andrew Challinor
13:50 – 14:05	Incorporating crop growth modelling into JULES	Tom Osbourne
14:05 – 14:20	ED vegetation dynamics, implications for physiology	Rosie Fisher
14:20 – 14:30	Physiological drought response	David Galbraith
14:30 – 14:40	Photosynthesis/Light interception	Lina Mercado
14:40 – 14:50	Phenology	Joerg Kaduk
14:50 – 15:00	N-Cycle	Josh Fisher
15:00 – 15:30	Discussion	
15:30 – 16:00	Coffee	

Agenda – Day 1 (continued)

16:00 – 18:00	Soil carbon and nitrogen and Biogenic fluxes	
16:00 – 16:05	Introduction	Pete Smith Oliver Wild
16:05 – 16:20	Recent progress in coupling soil C and N routines into JULES	Chris Jones Pete Falloon Jo Smith Kevin Coleman Bente Foereid Stephen Sitch
16:20 – 16:35	Testing the soil C and N routines for use in JULES in the QUERCC project	Matt Aitkenhead Bente Foereid Jo Smith Pete Smith
16:35 – 16:50	Improving knowledge and datasets for soil C & N turnover in QUERCC	Nick Ostle Nail McNamara Richard Bardgett Eva Tegidgo Margaret Glendining Goetz Richter and Andy Whitmore
16:50 – 17:05	Biogenic emissions of hydrocarbons	Juliette Lathiere
17:05 – 17:20	Effects of biogenic emissions on atmospheric composition	Paul Young
17:20 – 17:35	Ozone deposition and surface exchange of trace gases	Mhairi Coyle
17:35 – 18:00	Discussion	

Agenda – Day 2

08:30 – 09:00	Science steering group discussion	
09:00 – 11:00	Fire	
09:00 – 09:05	Introduction	Allan Spessa
09:05 – 09:20	LPJ-GUESS-SPITFIRE	Veiko Lehsten
09:20 – 09:35	SEVER-FIRE coupling to HadCM3	Richard Betts
09:35 – 09:50	Fires in Russian forests	Heiko Balzter
09:50 – 10:05	Fires in Indonesian tropical peatland forests	Susan Page
10:05 – 10:20	Fires, Atmospheric composition, and Earth system feedbacks	Oliver Wild
10:20 : 10:35	Vegetation, fire, hydrology feedbacks in permafrost zone, plans for implementation in JULES	Sergey Venevsky
10:35 : 11:00	Discussion	
11:00 – 11:30	Coffee	
11:30 – 13:00	Snow and Hydrology	
11:30 – 11:45	The effects of soil hydraulic/thermal parameter choice on JULES land surface fluxes and variables; field scale studies	Anne Verhoef
11:45 – 12:00	The effect of soil hydraulic/thermal parameter choice on MOSES2 land surface fluxes and variables; coupled global scale studies	Pier Luigi Vidale
12:00 – 12:15	Development of the JULES snow module	Richard Essery Martin Best Cecile Menard
12:15 – 12:30	Parameterisation of patchy snow in JULES	Andy Wiltshire
12:30 – 12:45	Microwave radiative transfer in a snow pack: Models and experimental objectives for Cold Land Processes Experiment II	Chawn Harlow
12:45 – 13:00	Integrating permafrost and peatlands into a DGVM	Rita Wania
13:00 – 14:00	Lunch	

Agenda – Day 2 (continued)

14:00 -- 15:00	Data assimilation	
14:00 – 14:30	Data assimilation in land surface schemes	Mathew Williams
14:30 – 15:00	Assimilating canopy reflectance into an ecosystem model	Tristan Quaife
15:00 – 15:30	Coffee and departure	

Acknowledgements to

- Exeter University
- Peter Cox
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