CONVEX Intense Rainfall and Flash Flooding Workshop

Introduction to CONVEX

Using Observational Evidence and Process Understanding to Improve Predictions of Extreme Rainfall Change

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The CONVEX team:

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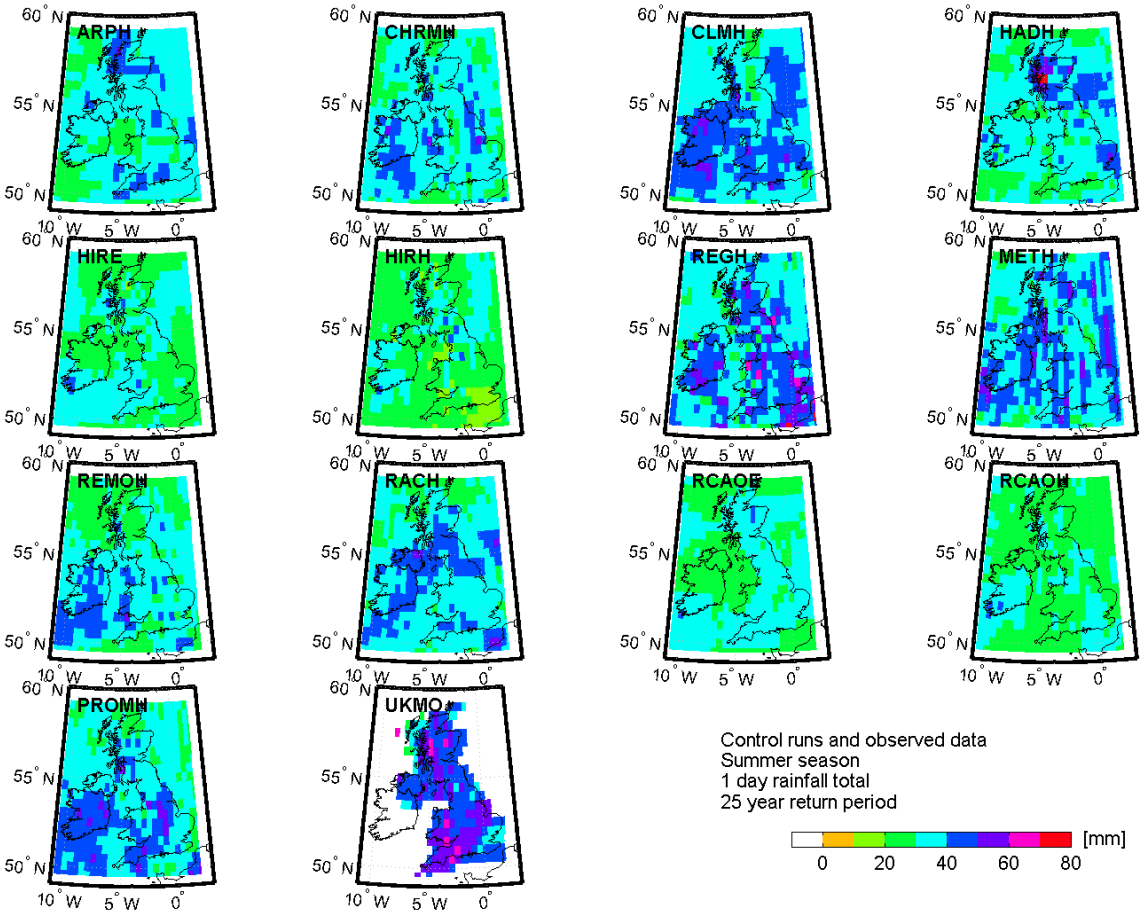
Why CONVEX?

- IPCC Special Report on Extremes shows statistically significant trends in the number of heavy (daily) precipitation events in some regions
- Intensities of hourly observations in some regions are increasing with temperature at a higher rate than theoretically expected
- Perception of increases in flooding globally
- Coarse-resolution climate models are unable to adequately simulate UK summer extreme rainfall

Coarse resolution climate models cannot simulate summer extremes

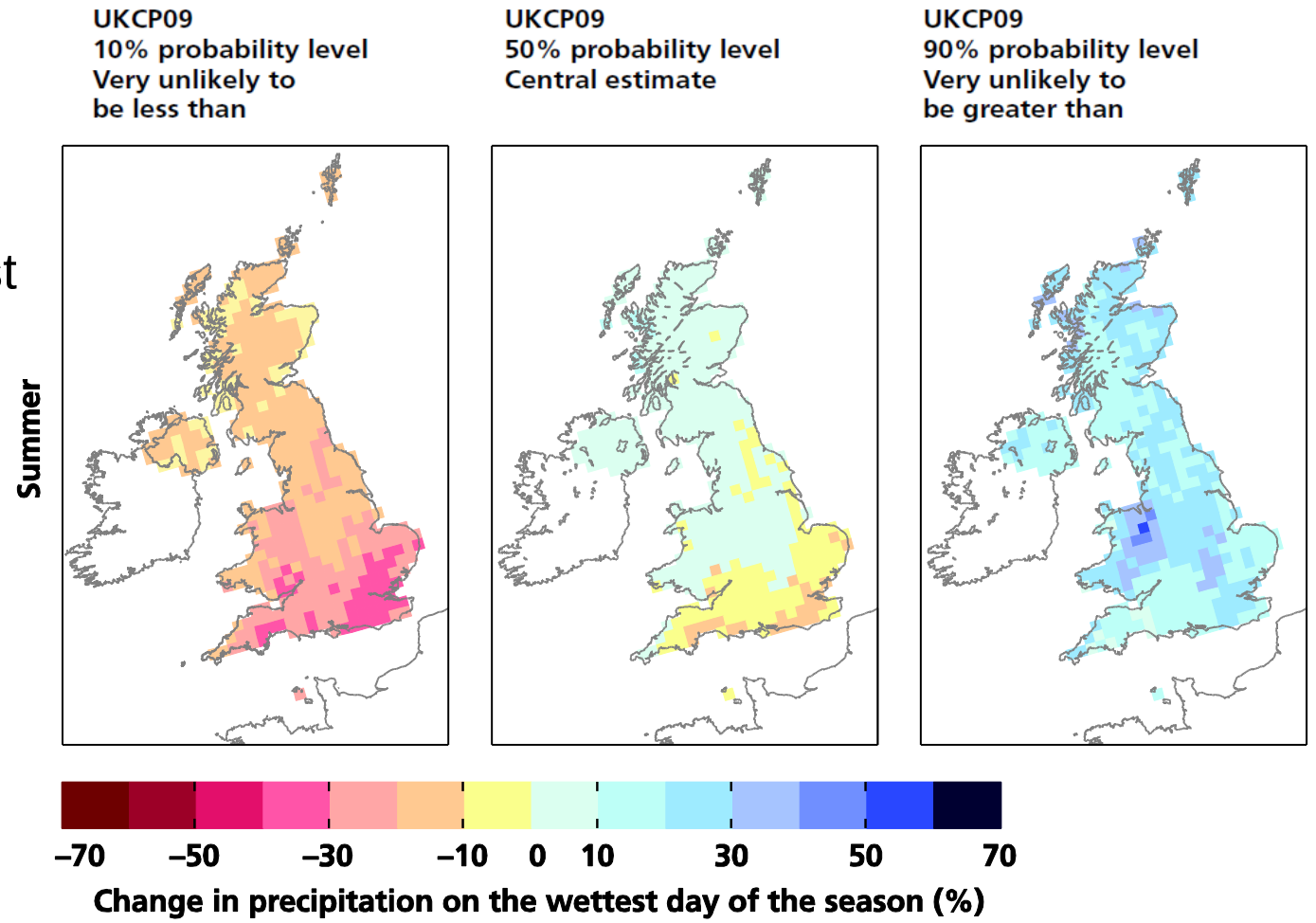


Summer, 1 day 25 year return level

Fowler and Ekström 2009

UKCP09 probabilistic projections

Changes in wettest day of summer by 2080s

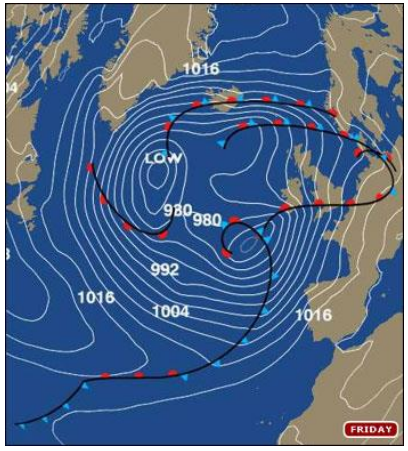


CONVEX: Objectives

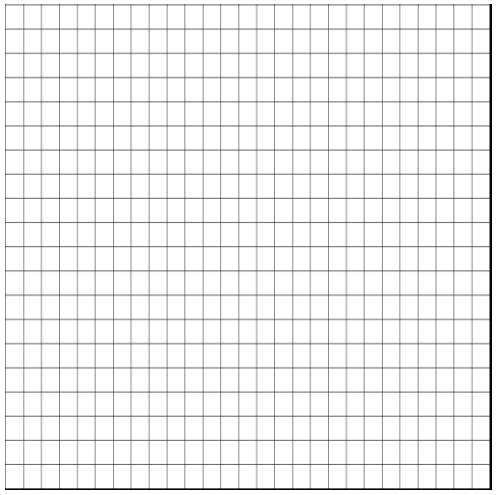
1. Explore observed rainfall data

3. Assess the deficiencies of climate and NWP models

2. Better understand the causes of extreme rainfall



4. Assess the influence of model detail – resolution and structure



100km

CONVEX: Objectives

5. Provide new estimates of change to extreme rainfall

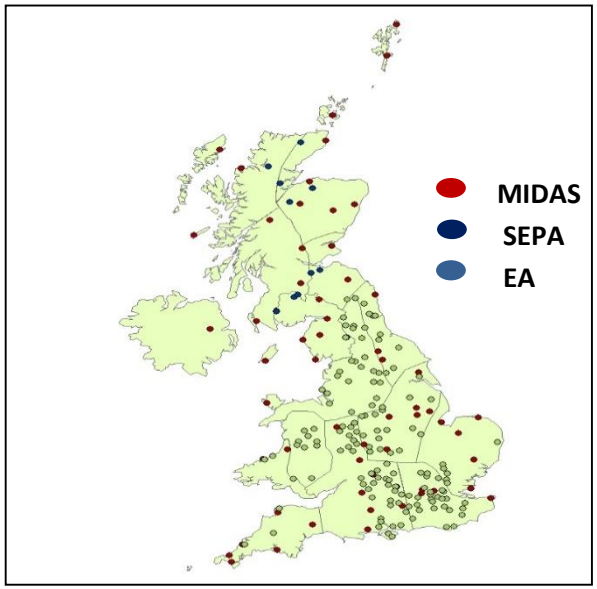
– inform future flood risk adaptation strategies

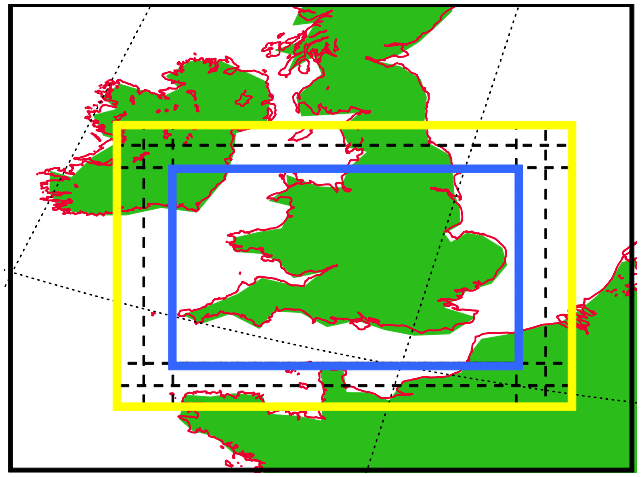
– improve climate and NWP models

CONVEX: Main outputs

- A new quality-controlled hourly observed rainfall dataset for the UK.

- The first climate change experiments with a very high resolution “convection permitting” model for a region of the southern UK run by the UK Met Office.





Workshop Agenda

10.00 New hourly rainfall observations for the UK (Dr. Stephen Blenkinsop)

10.20 Benefits of very high resolution modelling – an NWP perspective (Nigel Roberts)

10.40 Climate change at convection permitting scales (Dr. Lizzie Kendon)

11.10 Tea & coffee

11.30 Question Time

11.55 DEFRA (Dr. Mary Stevens, DEFRA Floods Programme)

12.20 CONVEX Headline messages

12.30 Lunch

13.30 Environment Agency (Molly Anderson, Climate Ready Support Service)

13.55 Murray Dale (CH2M Hill) will discuss the application of the CONVEX outputs to UK sewer design as part of an UKWIR project

14.20 UKCP09 in the light of new CONVEX results (Dr. Lizzie Kendon)

14.40 Tea & coffee

15.00 Stakeholder panel discussion

16.15 Key challenges and future developments

16.30 Close

Finding out more

The CONVEX project website:
http://research.ncl.ac.uk/convex/

Follow us on twitter: #CONVEX_PROJECT

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