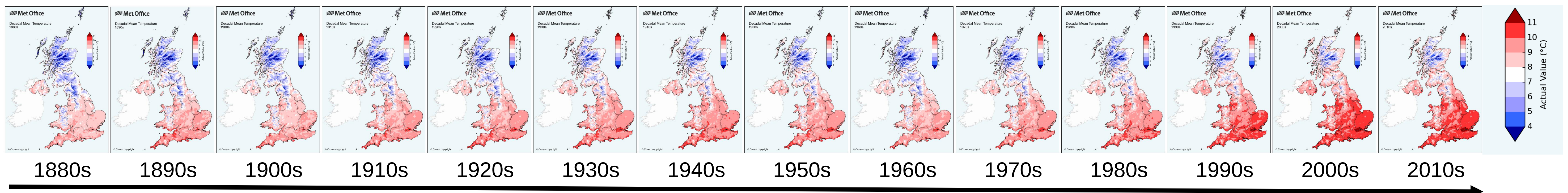


# HadUK-Grid – A new UK dataset of gridded climate observations

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## What is it?

HadUK-Grid is a gridded land surface dataset of 3 daily and 11 monthly variables for the UK, based on in situ climate observations. The primary dataset is a 1km x 1km grid on the British National Grid projection. To facilitate comparison with climate projections, the data are also provided at 5km, 12km, 25km and 60km resolution.

## What's new?

HadUK-Grid is a new iteration of an existing dataset that has been available since 2002 through the UK Climate Projections project.

The new dataset differs from the earlier one in a number of respects:

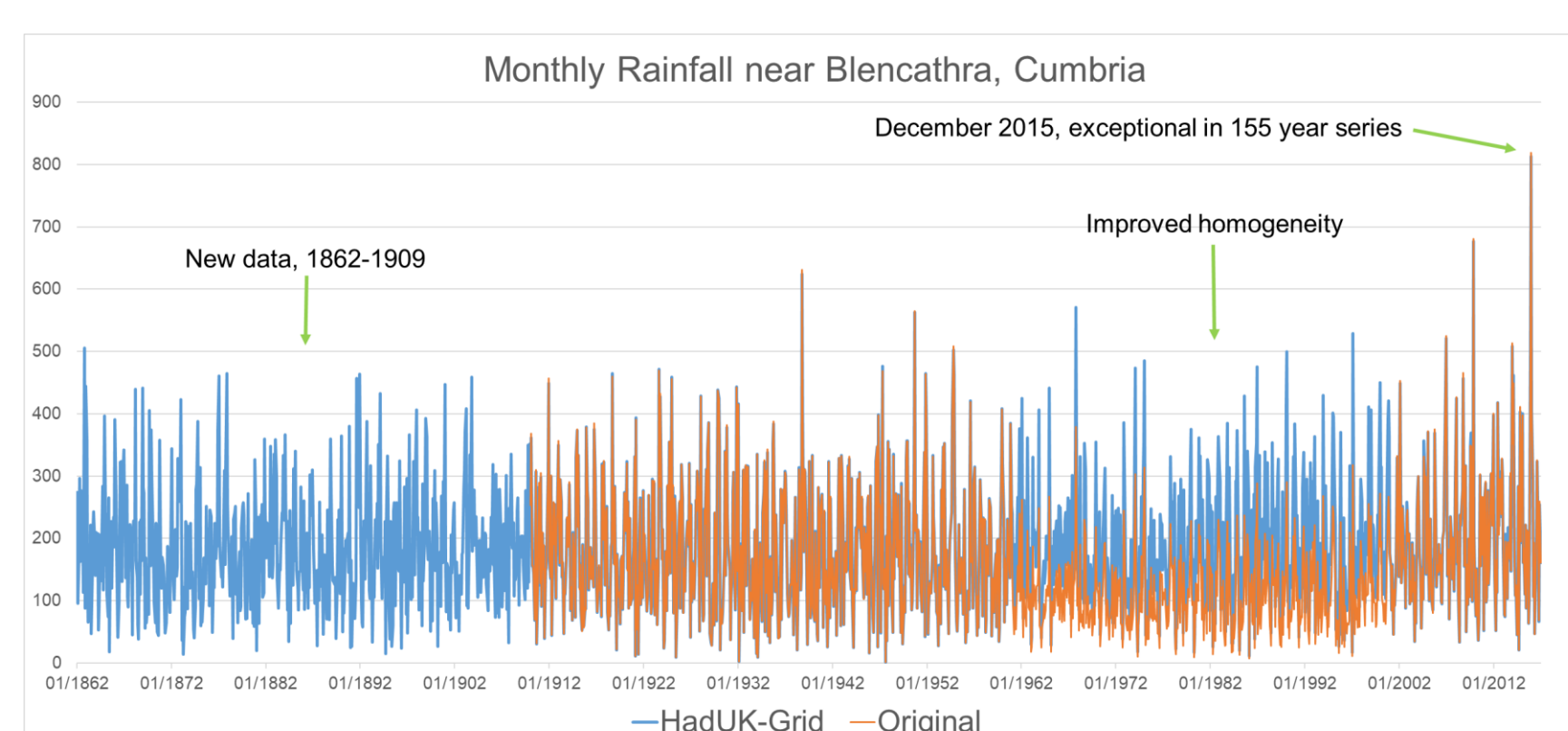
- Higher resolution (1km)
- Longer time series (starting in 1862) – this has been possible due to recent data recovery activities
- Improved consistency
- The use of publicly-accessible ancillary data sources (e.g. terrain elevation and land cover)
- Improved version control

Some things have not changed:

- The underlying station data – with the exception of additional data recovery.
- The gridding methods

## How does it compare?

Comparison between HadUK-Grid and the original dataset



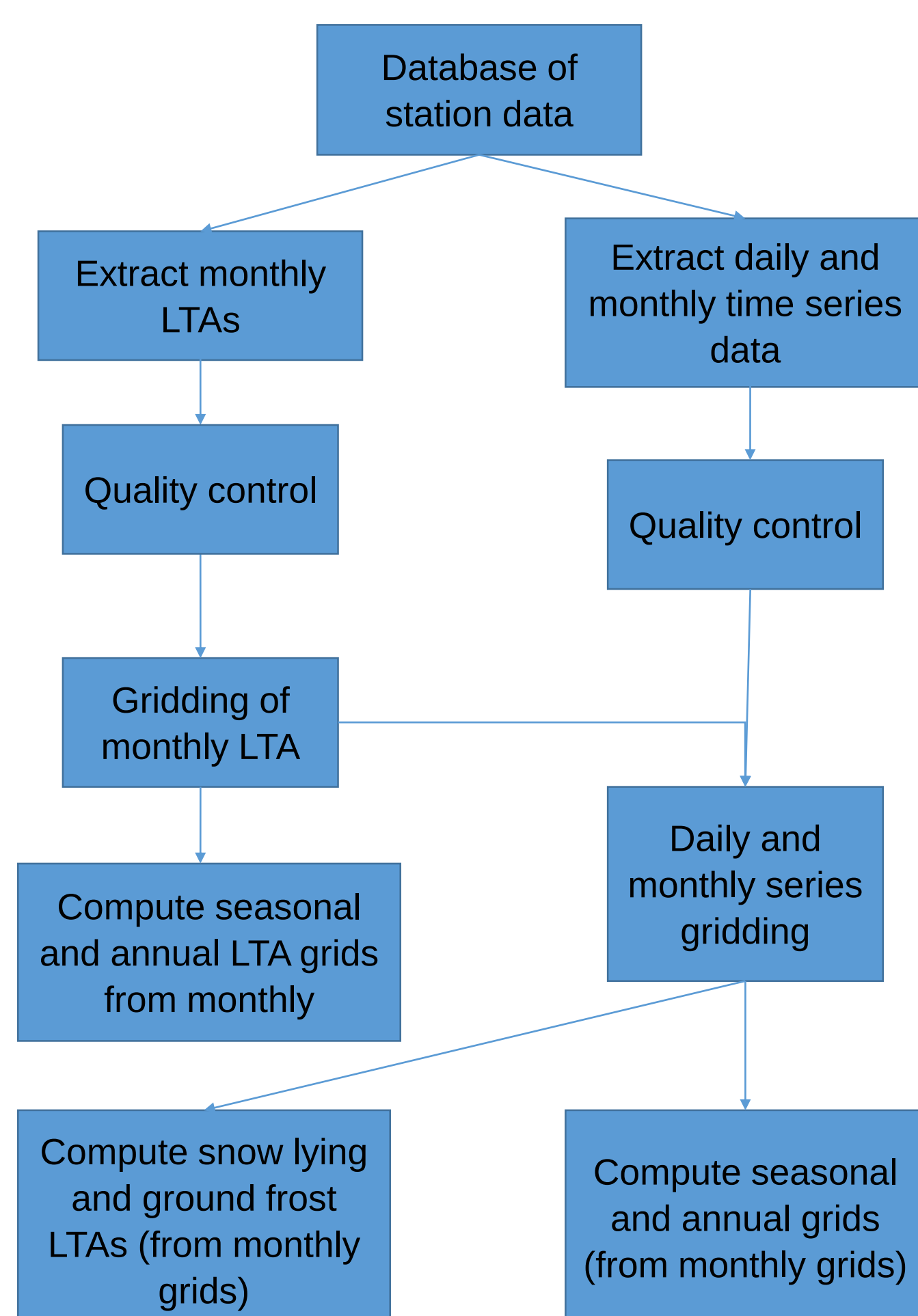
| Variable                    | Mean Difference | Root Mean Square Difference |
|-----------------------------|-----------------|-----------------------------|
| Daily Rainfall              | -0.1 mm         | 0.3 mm                      |
| Daily Maximum Temperature   | 0.01 °C         | 0.21 °C                     |
| Daily Minimum Temperature   | -0.02 °C        | 0.23 °C                     |
| Monthly Rainfall            | 0.8 mm          | 9.3 mm                      |
| Monthly Maximum Temperature | 0.01 °C         | 0.22 °C                     |
| Monthly Minimum Temperature | -0.02 °C        | 0.24 °C                     |

## How is it produced?

The station data are interpolated using inverse-distance weighted (IDW) averaging.

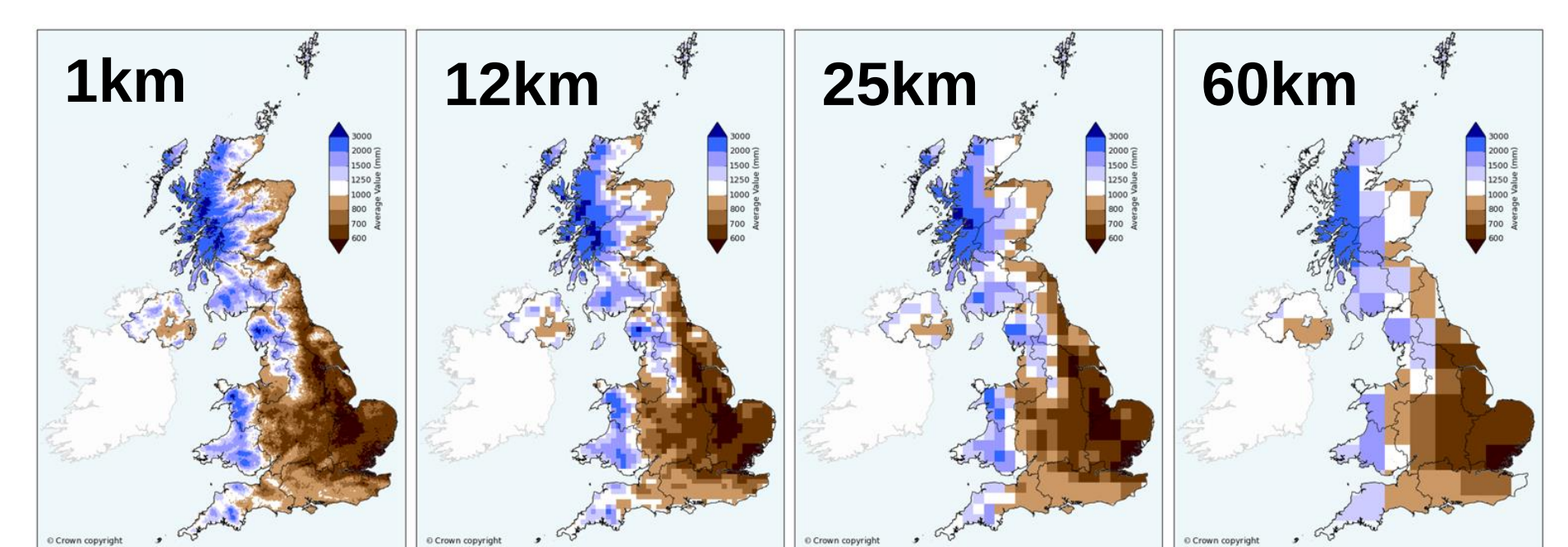
Some variables are transformed first, to remove spatial trends, by:

- Removing the long-term average (LTA).
- Using regression analysis to build a model of the relationship between the climate variable and one or more topographic variables.



## What is it for?

HadUK-Grid is intended for climate monitoring, assessment of climate trends, variability and extremes, climate model evaluation, hydrometeorology.



1981-2010 Average Annual Rainfall

## Will it be updated?

We plan to release a new version of HadUK-Grid each year (around July/August). In some years we may only add data for the previous year. In other years a more substantial update may be required e.g. due to improvements in the methodology.

## Can I use it?

Yes! The HadUK-Grid dataset has been released under an Open Government Licence. This permits the data to be copied, adapted and exploited both commercially and non-commercially.



It can be downloaded from the Centre for Environmental Data Analysis (CEDA) Archive:  
<https://catalogue.ceda.ac.uk/uuid/4dc8450d889a491ebb20e724debe2dfb>

## What's next?

Version 1.0.0.0 (including data up to 2017) was released on 26 November 2018.

Version 1.0.1.0 (including data for 2018, a number of climate indices and long-term averages) will be released in Autumn 2019.

For the following version we plan to implement a new automated QC process. We also plan to assess the homogeneity of the dataset and investigate its effective resolution.