Creating surface temperature datasets to meet 21st Century challenges: Introductory remarks

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Welcome!
• Do we know what level of climate change is dangerous, where and for whom?

• Can we provide society with a ‘road map’ indicating what climate changes may be expected to occur, where, and with what implications?

• What should we do to mitigate and adapt to climate change to avoid its worst impacts?
‘The foolish man built his house upon the sand. The rain came down and the floods came up .... And the house came tumbling down’

‘The wise man built his house upon a rock .... and the house on the rock stood firm.’

Observations are the bedrock of the case for global warming and the need for action
Four global land surface temperature data sets
Representing uncertainty

Global average land temperature 1850-2009

Anomaly (°C) wrt 1961-90

-1.0  1900  1950  2000

Total uncertainty
Station, sampling and coverage uncertainty
Station and sampling uncertainty
Best estimate

Brohan et al, 2006
New results suggest recent warming may be underestimated.

Increase in mean near-surface temperature (°C) from (1989-98) to (1999-2008):

- Land surface station observations
- Reanalysis using all observations
Understanding the sources of global temperature changes

Global ranked temperatures

1998 El Nino

2008 La Nina

2009

Anomaly (°C) wrt 1961–90

Rank

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Protecting our cities
Feeding the world
Managing our water
Extremes around the world
Pakistan floods
Extremes around the world
Moscow heat
Extremes around the world
Chinese Summer Rains
Workshop aims

• To agree well defined plan of how as an international community to go about undertaking necessary data rescue, analysis and verification to produce global surface temperature records at monthly, daily and sub-daily resolution that are fit for climate services.

• To agree how to ascertain the strengths and weaknesses in the resulting estimates of historical changes and quantify the inevitable uncertainties.

• To engender broad input into the process design from expert communities outside of the traditional community

• To ensure outputs will be usable by a broad range of stakeholders and accessible to everyone