WMO LC-ADCP & GADCU update

(Lead Centre for Annual to Decadal Prediction & Global Annual to Decadal Climate Update)

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• Started as an informal exchange of decadal predictions among modelling centres around the world in 2010 (Smith et al. 2013) to produce a large multi-model ensemble of real-time decadal forecasts.

• Building on this effort the Met Office was designated the Lead Centre for Annual to Decadal Climate Prediction in May 2017. Organisationally it sits under ET-OCPS.

• Some of the responsibilities of the Lead Centre are:
  • Prepare forecast fields annually from the data collected
  • Prepare verification statistics of the multi-model and individual models
  • Make available up-to-date information on the decadal prediction systems
  • Create Global Annual to Decadal Climate Update (consensus forecast)

• This is all available at www.wmolc-adcp.org
• Issued annually by WMO Lead Centre for Annual to Decadal Climate Prediction, hosted by the Met Office

• International contributions from BSC, CSIRO, CCCMA, CMCC, DWD, Met Office, GFDL, MIROC, MRI, BCCR, SMHI+DMI

• Climate predictions for the next five years

• Now considered one of the key annual output reports of the WMO

• Headline result: 40% chance of exceeding 1.5°C global temperature in next 5 years

• Press releases from WMO and Met Office had phenomenal pickup by nearly all major news outlets with millions of subscribers and in multiple languages

• www.wmolc-adcp.org
• It is about as likely as not (40% chance) that at least one of the next 5 years will be 1.5°C warmer than pre-industrial levels and the chance is increasing with time.

• It is very unlikely (10% chance) that the five-year mean global near-surface temperature for 2021-2025 will be 1.5°C warmer than pre-industrial levels.

• The chance of at least one year exceeding the current warmest year, 2016, in the next five years is 90%.
• There is a high probability for above average temperatures almost everywhere, the Arctic (north of 60°N) anomaly is more than twice as large as the global mean anomaly.
• The subtropical North Atlantic, shows an increased chance of low pressure which, combined with higher temperatures and a northward displacement of the Intertropical Convergence Zone (ITCZ), suggests an increased chance of tropical cyclones in this basin.
Skill maps for 1-5 years lead time

Baseline: 1981-2010

- Skill is high for temperature including for the Arctic.
- Sea-level pressure skill is moderate in the tropical Atlantic and for precipitation over land close to the ITCZ.

Stippling where positive correlation skill is not significant at the 5% level.
News and Plans

• Review of GPCs – CSIRO elected as new member joining BSC, DWD, Met Office and CCCMA giving a total of five GPCs

• Updates to website (www.wmolc-adcp.org):
  • Deterministic and probabilistic skill score maps for individual models and multi-model ensemble mean
  • Time series of global mean temperature, AMV and PDV both hindcasts and forecasts for models and mean
  • Updated System Configuration Information for new system versions and new systems
  • WCRP Recognition

• Future plans:
  • Seasonal mean maps and indices
  • Regional information

• Questions for WGSIP:
  • Which regions to use? RCOFs, RCCs, RAs, AR6?
  • Should we provide guidance for use of data, if so what kind?