Grand Challenge: Near Term Climate Prediction

41st Session of the WCRP Joint Scientific Committee

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May 2020

Sydney, Australia

WORLD METEOROLOGICAL ORGANIZATION

United Nations Educational, Scientific and Cultural Organization

Intergovernmental Oceanographic Commission

International Science Council

WCRP World Climate Research Programme

Links to the WCRP Strategic and Implementation Plans

WCRP Mission:

The World Climate Research Programme (WCRP) coordinates and facilitates international climate research to develop, share, and apply the climate knowledge that contributes to societal well-being.

This GC has set up the machinery and developed and shared annual to decadal predictions from multiple centres in real time for the first time.

WCRP Scientific Objective 2: Prediction of the near-term evolution of the climate system. We will push the frontiers of predictions and quantify the associated uncertainties for sub-seasonal to decadal time scales across all climate system components.

This GC directly addresses this objective. Our Annual to Decadal Climate Update is the main product.

WCRP Scientific Objectives 1 and 3: Fundamental understanding, Future climate evolution

Members of our group are involved in fundamental research into decadal predictability and our goal is to predict near term future climate evolution.

WCRP Scientific Objective 4: bridging climate and society.

Addresses this objective via discussions with the UNEP-Finance Initiative and Task force on Climate related Financial Disclosures and our association with CORA who helped distribute the global annual to decadal climate update widely and continue to be involved. Also moving towards decadal climate services as the GC evolves.

Emerging issues

- Almost completed our 4 initial objectives (research, standards, operational, annual to decadal update) so we now plan a new focus on decadal climate prediction services
- Expansion of WMO Lead Centre -> data, verification
- Refresh of membership underway but co-chair Yochanan Kushnir to step down: need a new co-chair suggestions welcome
- There is a need to seamlessly link seasonal predictions with near term decadal predictions and long term projections

Progress and achievements

WMO operational decadal predictions

WMO Lead Centre for Annual-to-Decadal Climate Prediction

The Met Office is a designated Lead Centre for Annual-to-Decadal Climate Prediction (LC-ADCP). The LC-ADCP collects and provides hindcasts, forecasts and verification data from a number contributing centres worldwide.

- Improved web site: www.wmolc-adcp.org
- Lead centre: Met Office
- Global Producing Centres and Contributing centres:

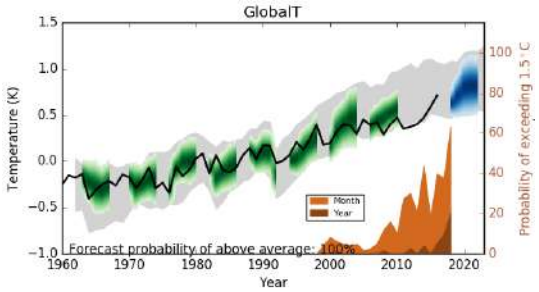
Global Producing Centres

BSC | CCCMA | DWD | MOHC

Contributing Centres

BCCR	IPSL	MPI	NRL
CERFACS	LASG	MRI	Reading
GFDL	MIROC	NCAR	SMHI

Annual-to-decadal climate update



- Two years of dry runs now complete
- Reviewed via CORA with many WCRP groups
- Produced in collaboration with other parts of WMO
- First real time update issued this month

Standards and Verification

Standards for production and verification of Annual to Decadal Climate Predictions

Executive summary

Introduction

Recommended forecast system characteristics
- Hindcast period and length
- Initialisation dates and methods
- Ensemble size
- Cut-off dates
- External Forcing

Data availability
- List of variables
- Data dissemination

Product generation
- Forecast products
- Forecast times in ADCP

- Community development of standards for Annual to Decadal Predictions
- Complements minimum requirements of WMO
- Under review

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