

# WGNE - *Working Group on Numerical Experimentation*

## Key outcomes for WGNE

Ayrton Zadra and Keith Williams  
(WGNE co-chairs)



Report for WMAC  
Pan-WCRP Modelling Groups Meeting  
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# WGNE - *Working Group on Numerical Experimentation*

→ fostering the **development of atmospheric circulation models** for use in weather prediction and climate studies on **all time scales**, and **diagnosing and resolving shortcomings**.

- WGNE exists for **over 30 years**

- WGNE reports to both

*WCRP Joint Scientific Committee (JSC)*

*WMO Commission for Atmospheric Sciences (CAS)*



- WGNE has been a **pioneer of seamless work** (e.g. developing the AMIP and Transpose-AMIP methodologies)



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## Desired outcomes from this meeting

- get **updates** from and make **links** with **other WCRP groups** on common topics
- set **strategic directions of WGNE activities for coming years**
  - in light of recent WGNE workshop on systematic errors
  - considering links to GASS/GLASS projects
- be able to have our “normal” annual WGNE-32 meeting



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## WGNE activities over recent years

MJO-Task Force

YoTC

High-Res MIP

Transpose-AMIP

Grey Zone

DCMIP

WGNE Table of  
supercomputing development

Drag Project

Aerosols Project

Parametrization development

Routine model evaluation/  
verification

WGNE-WGCM Climate Metrics  
and Diagnostics Panel

JWGFVR

Links to other groups

WGNE Workshops on  
Systematic Errors



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## Concrete actions on model development

### New surface fluxes project (outcome from WSE)

**Action 6** Francois B and Carolyn to lead a project on surface fluxes (joint with GASS, GLASS and in discussion with CLIVAR and DAOS). Initial focus will be over oceans. Co-chairs to then support the leaders in encouraging centres to participate.



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## Concrete actions on model development

### New model uncertainty project (outcome from WSE)

**Action 9** On Carolyn (or Oscar) to propose a joint project on model uncertainty with PDEF (possibly starting with coarse graining). DAOS to be kept in loop.



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## Concrete actions on model development

### Expansion of drag project (outcome from WSE)

**Recommendation 6** for Drag project to evolve into momentum project.

**Action 11** – Ayrton and John to improve co-ordination regarding momentum project with SPARC.



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## Concrete actions linking across timescales

### Aerosols project

**Action 10** – Ariane and Francois E to take forward the Aerosols project joint with S2S (One angle might be use of ORACLES - NASA field campaign over S. African coast – and SAMBBA over S. America).



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## Concrete actions linking across timescales

### Verification/evaluation

**Recommendation 5** CMDP & JWGFVR to quantitatively report on ~5yr frequency improvements in climate modelling.

**Recommendation 15** – CMDP and JWGFVR to consider evaluation of climatology of NWP forecasts and forecast ability of climate models (in Transpose-AMIP).

**Action 22** – Julio to create climatological maps of precipitation from global NWP forecasts.



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## Concrete actions linking across timescales

### Exascale challenge

**Action 20** – Nils to contact OMDP to take forward bringing together cross-timescale community on exascale.

**Action 21** – Nils to provide a review of exascale activities at WGNE33.



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## Recommendation for the review

**Recommendation 14** – Model development activities (WGNE, GASS, GLASS) should sit in the centre of WMO science (as opposed to just under WWRP or WCRP).



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