

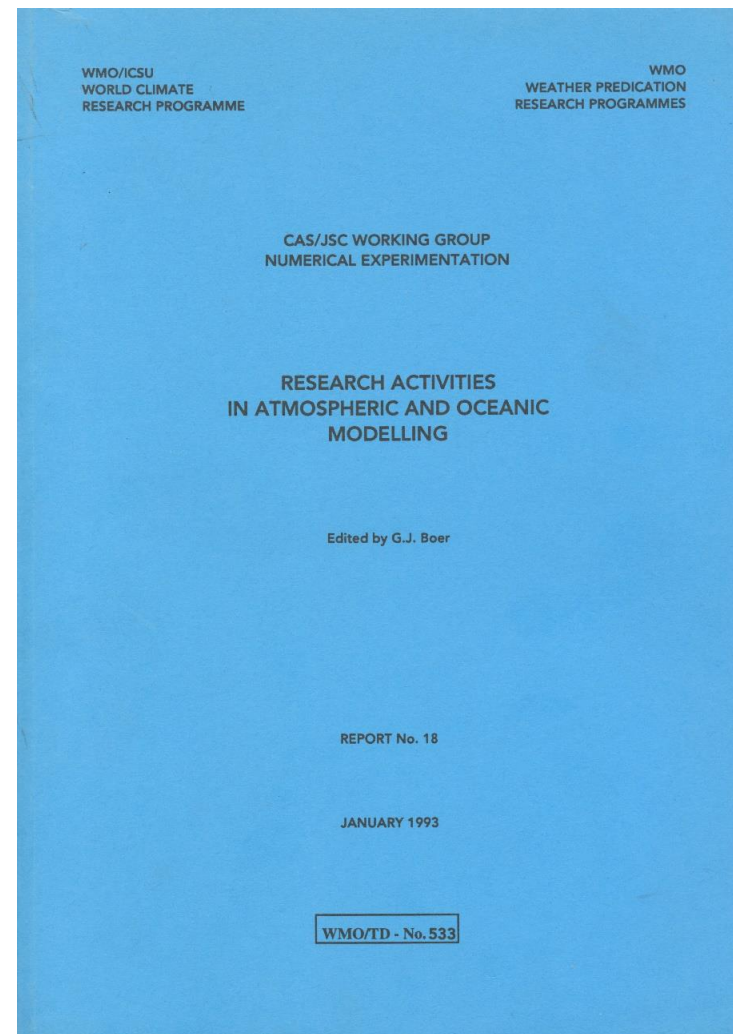
WGNE Blue Book

Elena Astakhova

Hydrometcenter of Russia



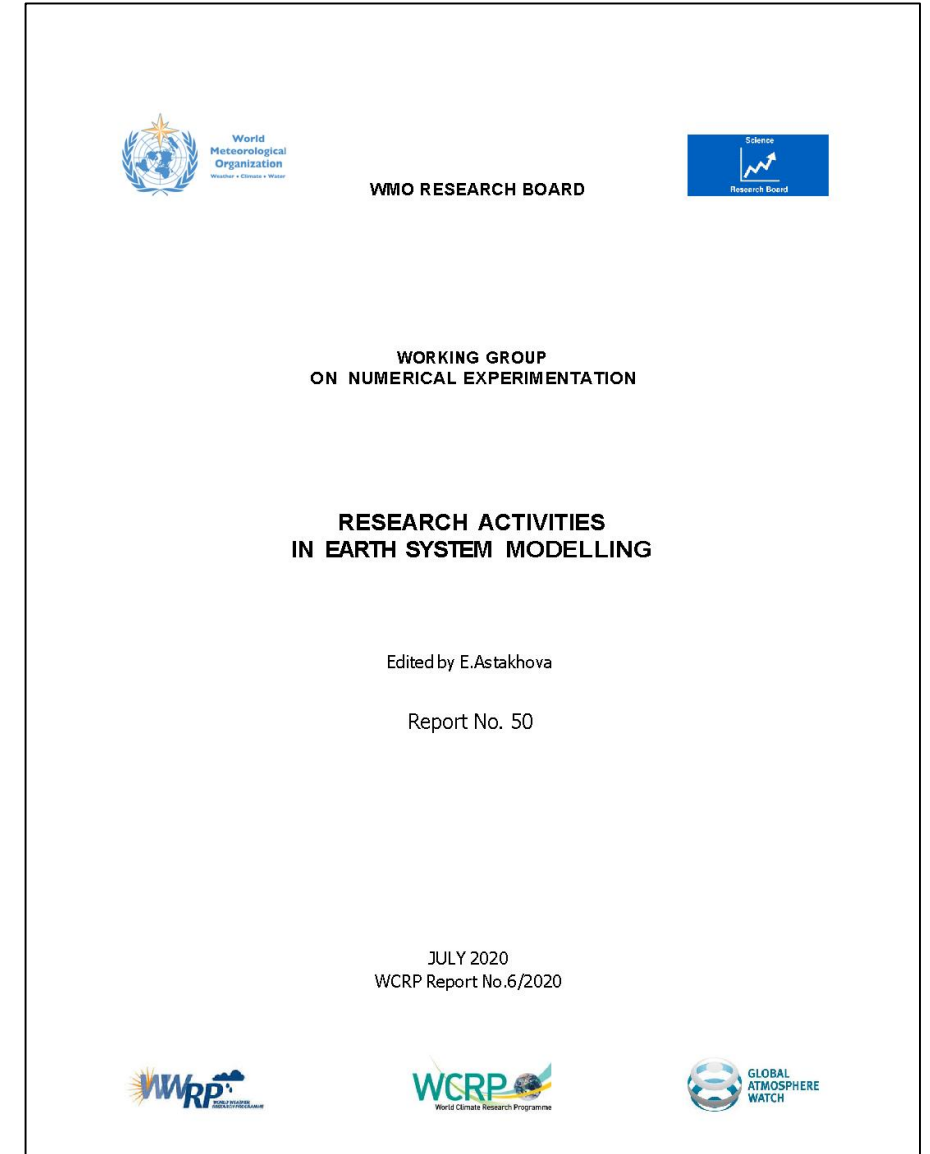
WGNE 35, November 2-5, 2020



The **WGNE Blue book** is a **nickname** for the annual publication prepared under the auspice of **WGNE** and published by **WMO** as a **WCRP Report** since 1992.

Till 2019 its proper name was
**Research Activities in
Atmospheric and Oceanic Modelling.**

In 2020 it was changed to
**Research Activities in
Earth System Modelling.**





A nickname is a substitute for the proper name of a familiar person, place or thing. Commonly used to express affection, it is a form of endearment and amusement.

But please do not use the nickname Blue Book in references !!!!!

References

- ~~1. Aldukhov O.A., Chernykh I.V. Trends 1-st and 2-nd order of air temperature at the surface level from global radiosonde data // Current volume of the Blue Book.~~

Citation example is now given at the site:

Before 2020: Research activities in atmospheric and oceanic modelling. CAS/JSC Working Group on Numerical Experimentation. Report No. 49. WCRP Report No.12/2019. WMO, Geneva

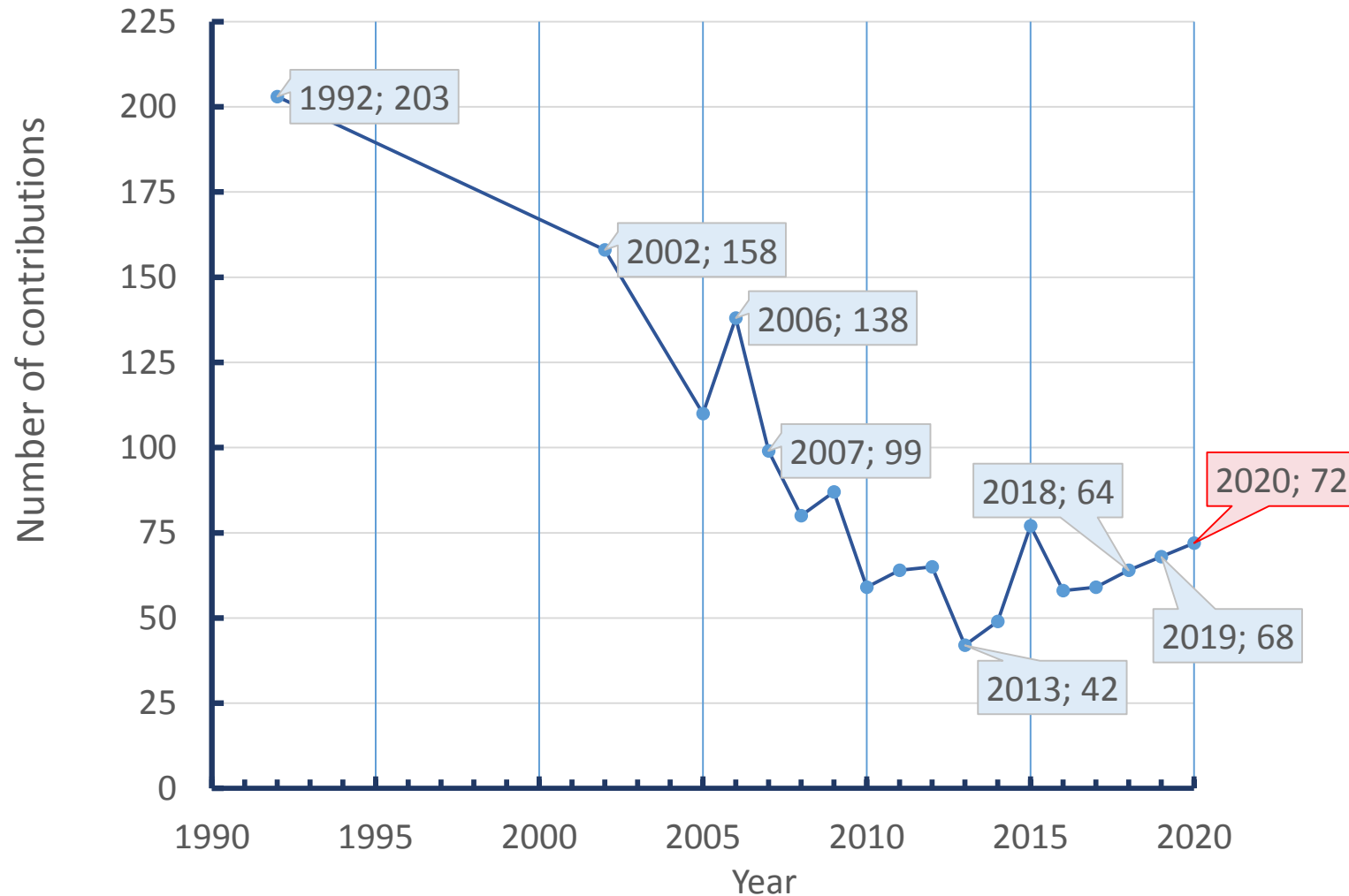
Starting from 2020: Research activities in Earth system modelling. Working Group on Numerical Experimentation. Report No. 50. WCRP Report No.12/2020. WMO, Geneva

Thanks to Pascal Marquet for the advice !

WGNE Blue book 2020

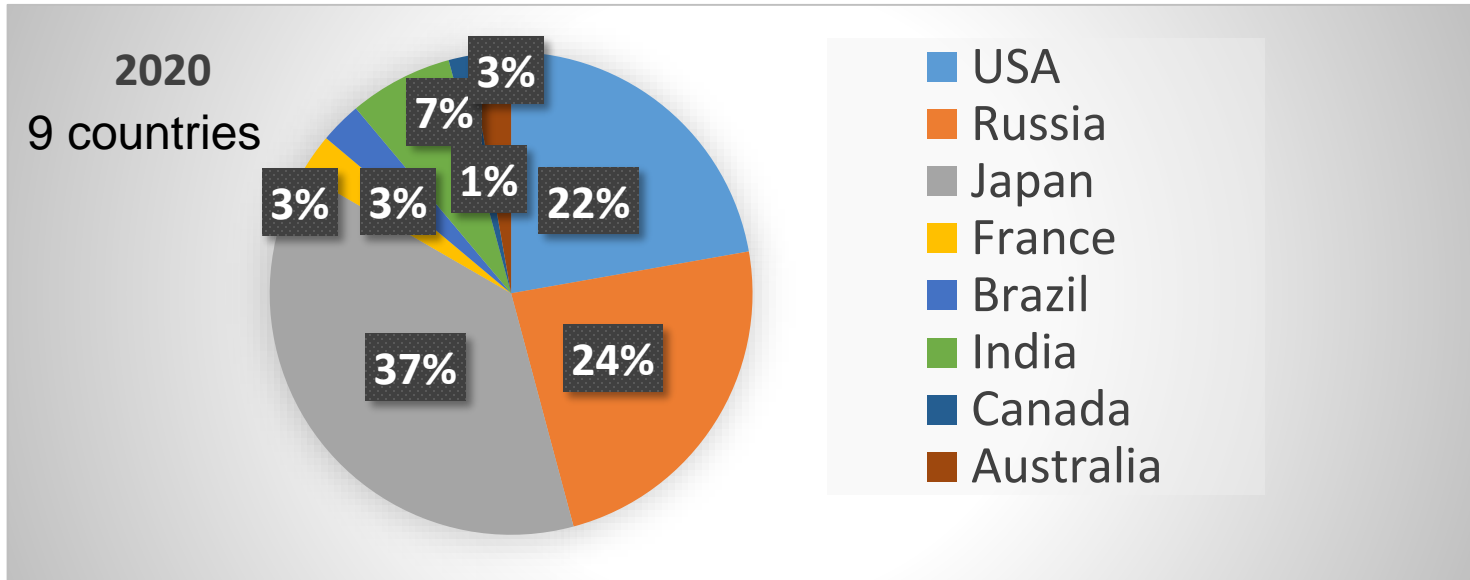
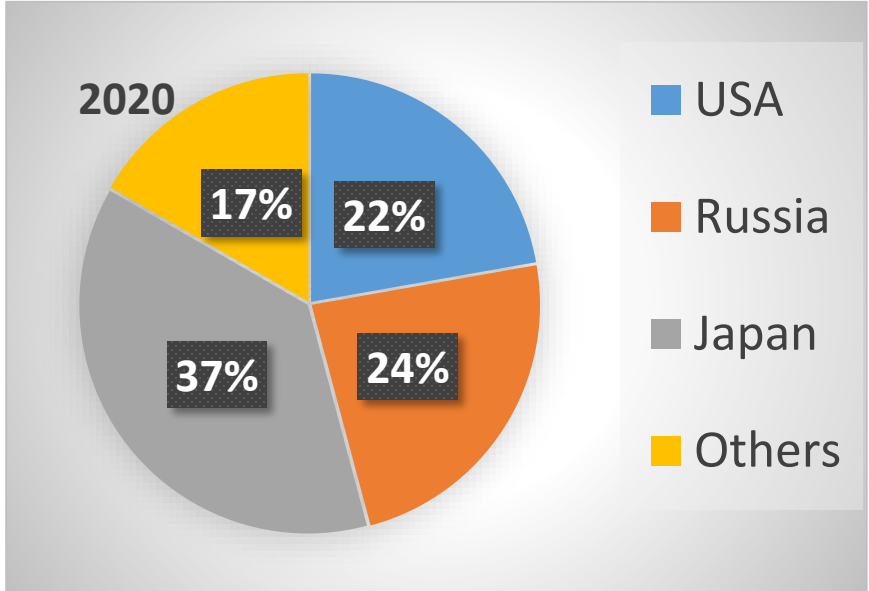
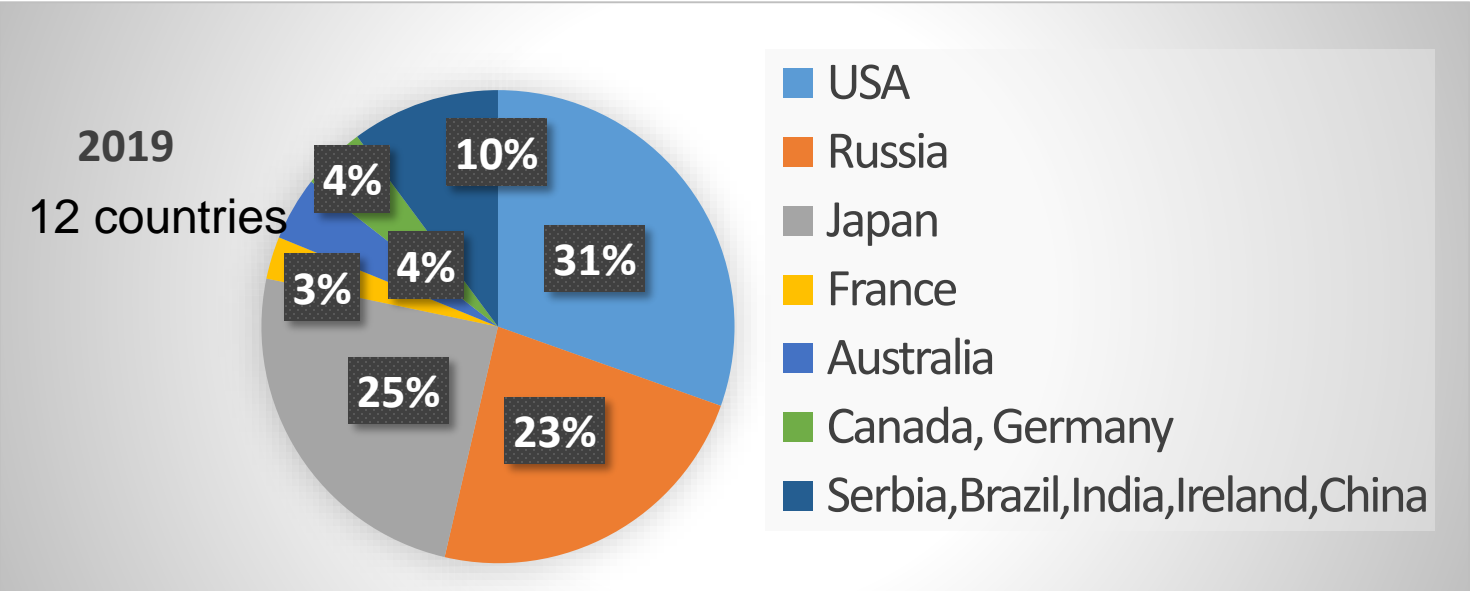
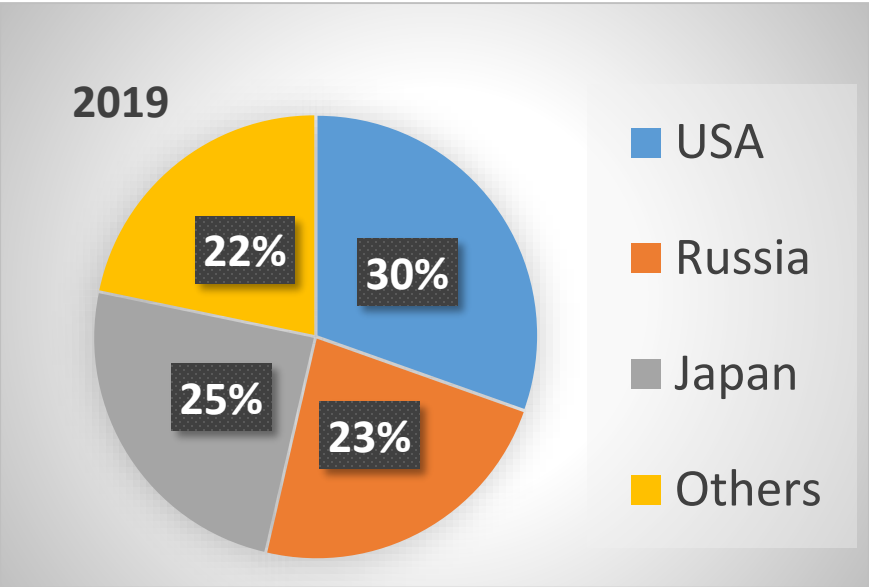
- The call for contributions was sent on February 19, 2020.
- The first deadline was May 11, 2020.
- The deadline was extended to May 31, 2020 (for more than two weeks) because of unfolding COVID-19 pandemic and related measures undertaken around the world
- Problems with e-mail addresses (corporate mail was not accessible for some scientists)
- The Blue Book 2020 was published on July 7, 2020 (as usually)

Evolution of the number of contributions



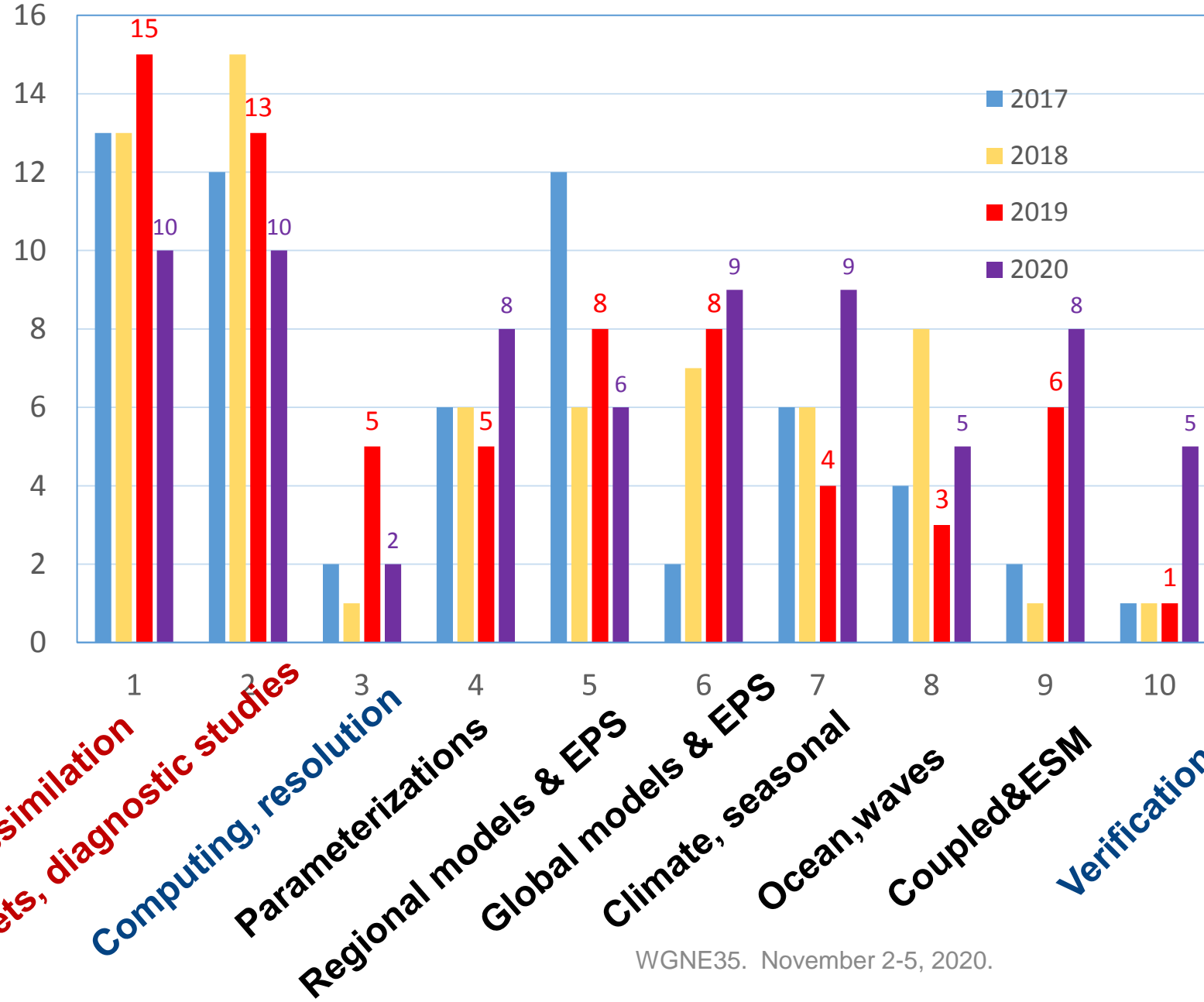
From 60 to 70 contributions in the last years

Contributing countries



Distribution of papers over sections (2017-2020)

Total:
 2017: 60
 2018: 64
 2019: 68
 2020: 72



Redistribution of contributions in 2020:

- less papers on assimilation and diagnostic studies
- more papers on climate, ocean, ESM, verification

This year in the WGNE Blue book:

➤ Upgrades of JMA NWP system

A New Data Assimilation System and Upgrading of Physical Processes in JMA's Meso-scale NWP System. Y.Ikuta, H. Kusabiraki , etal

(the highest improvement of forecasting quality observed in the last decade)

Introduction of a new hybrid data assimilation system for the JMA Global Spectral Model. T.Kadowaki, Y.Ota,S. Yokota *(LETKF/4D-Var)*

Upgrade of JMA's Global Ensemble Prediction System H. Yamaguchi etal

Upgrade of JMA's Operational Global Model H. Yonehara etal

This year in the WGNE Blue book:

➤ Further development of American systems

Computational Performance Improvements in GFSv16 J. Wang, J. Whitaker et al
(*Parallel writing, scalability, data transfer*)

Testing a New Horizontal Mixing-length Formulation in HMON. W. Wang et al (*Updates of Hurricanes in a Multi-scale Ocean-coupled Non-hydrostatic model*)

Preliminary Evaluation of NOAA's GEFS-Aerosol Model P.S. Bhattacharjee et al

Model Development of the Unified Forecast System for Subseasonal to Seasonal Timescales J. Meixner et al (*coupled*)

This year in the WGNE Blue book:

➤ Systems from Russia

Long-Term High-Resolution North Atlantic Atmospheric Hindcast for Multipurpose Applications. A. Gavrikov et al *(in cooperation with France)*

Combining precipitation fields on the basis of radar data and mesoscale model output products in nowcasting systems of Hydrometcenter of Russia A.V. Smirnov, A.V. Muravev, D.B. Kiktev *(Nowcasting system)*

This year in the WGNE Blue book:

➤ Physics from France

A new Estimated Inversion Strength (EIS) based on the moist-air entropy. Pascal Marquet and Peter Bechtold (*planned for introduction in IFS cycle 48r1 (2020) in the context of a larger moist physics upgrade*).

Impact of the 1D sea-ice model GELATO in the global model ARPEGE. Eric Bazile, Niramson Azouz et al (*evaluated during YOPP*)

➤ Verification system from Brazil

SCANTEC: A Community System for Evaluation of Numerical Weather and Climate Prediction Models. Joao Gerd Zell de Mattos et al

And many others....

WGNE site wgne.meteoinfo.ru



Working Group on Numerical Experimentation

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About



"Weather Forecasting Factory" by Stephen Conlin, 1986.

Based on the description in Weather Prediction by Numerical Process, by L.F. Richardson, Cambridge University Press, 1922, and on advice from Prof. John Byrne, Trinity College Dublin. Image: ink and water colour, c. 50 x 38.5 cm. © Stephen Conlin 1986. All Rights Reserved.

Painting with zoom facility.

The link and the image were taken from <http://mathsci.ucd.ie/~plynch/Publications/RFFF-WX-02-NoAbs.pdf>. Courtesy of Dr. Peter Lynch, School of Mathematics&Statistics, UCD.

The Working Group on Numerical Experimentation (WGNE) has responsibility for the development of Earth system models for use in weather, climate, water and environmental prediction on all time scales, and diagnosing and resolving shortcomings. WGNE's history can be traced back to 1967 when it was formed under Global Atmospheric Research Programme (GARP). In 1985, WGNE evolved under the joint supervision of the Commission for Atmospheric Sciences (CAS) and the World Climate Research Programme (WCRP) into a group

LATEST NEWS

- [HIWeather 2020 Workshop registration deadline was extended to 20 October](#)
- [IS-ENES3 1st Virtual Autumn school on climate data use for impact assessments, from Nov. 4th to Dec. 11th, 2020](#)
- [HIWeather 2020 Workshop, December 1-3 2020](#)
- [High Resolution Earth System Modeling Conference: October 12th-14th 2020](#)
- [ECMWF Annual Seminar, 14-18 September 2020 on Numerical methods for atmospheric and oceanic modelling: recent advances and future prospects](#)



WGNE site

In 2020 the WGNE site wgne.meteoinfo.ru was modified following 2020 WMO Constituent Body Reform:

- home page was changed
 - logo of Research Board instead of WCRP & CAS
 - new formulation of WGNE purpose

The purpose of WGNE is to foster collaborative development of models of the Earth system (design, implementation, error diagnosis and model revision) across the full range of temporal and spatial scales.

- new terms of reference
- relation to other groups (diagram changed)

Thanks to Keith and Mich!

WGNE site

- Information about meetings&workshops in News is regularly updated (Thanks to Mich, Ariane)
- Additional information from WGNE members is welcome

Problems:

- Upgrades of NWP systems are not up to date
- Information on WGNE projects at <http://wgne.meteoinfo.ru/activities/on-going-activities/> should be upgraded (e.g. no information on model uncertainty project)
- Some links are not valid any more (mainly at <http://wgne.meteoinfo.ru/activities/on-going-activities/wgne-mjo-task-force/>)

Feedback from WGNE members is needed!