Report on SEECOP Activities

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SEECOP

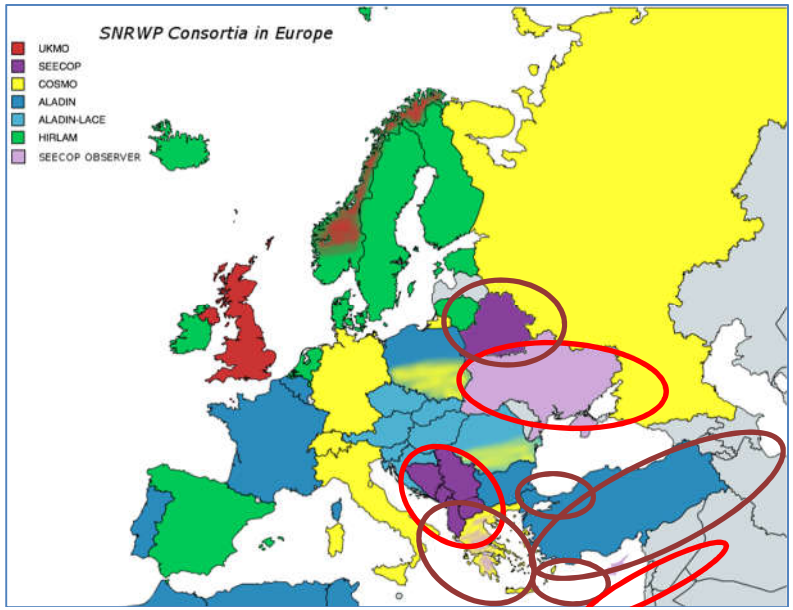
- **SEECOP: South East European European Consortium for Operational weather Prediction**

- **Consortium model: NCEP/NMM**

- **SEECOP Consortium Member Countries:**
  - **Albania**
  - **Federation of Bosnia and Herzegovina**
  - **Republic of Srpska** (Bosnia and Herzegovina)
  - **North Macedonia**
  - **Montenegro**
  - **Serbia**

  Members with pending Agreement signatures:
  - **Belarus**
  - **Cyprus**
  - **Moldova**

  Observers:
  - **Turkey**
  - **Greece**
  - **Israel**



5th Annual SEECOP Council Session (5 Nov 2019, Tel Aviv, Israel)

- Ukraine joined SEECOP

- Belarus – pending for signing the SEECOP Agreement

- Cyprus -a new SEECOP member (still pending for signing the SEECOP Agreement)

- Observers
  - Greece
  - Cyprus
  - Moldova
  - Israel

SEECOP management

- **Consortium Council (CC)**
  - Composed of the Members' Directors
  - Reguar anuual

- **Coordination Experts Team (CET)**
  - operation plans

- **Working Group subjects (WGs)**
  - Data assimilation
  - Applications
  - System aspects (code management)
  - Diagnostic, validation and verification

Principles of Consortium cooperation

- **sharing resources** (expertise, data, modelling)
- **reducing overlaps** with other Members in NWP
- **training**
- **open for cooperation** with other consortia
- **open for** new memberships, not necessarily belonging to SEE region
- **self-funding**, searching for external funding
- **model code repository** with the basic and developed programs
- **research** and **appications** focused on operational needs

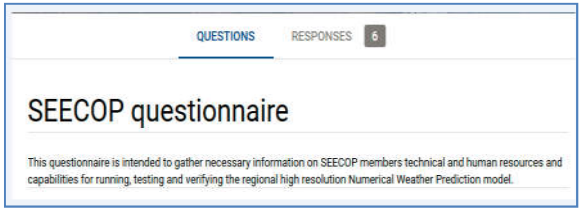
Consortium resources

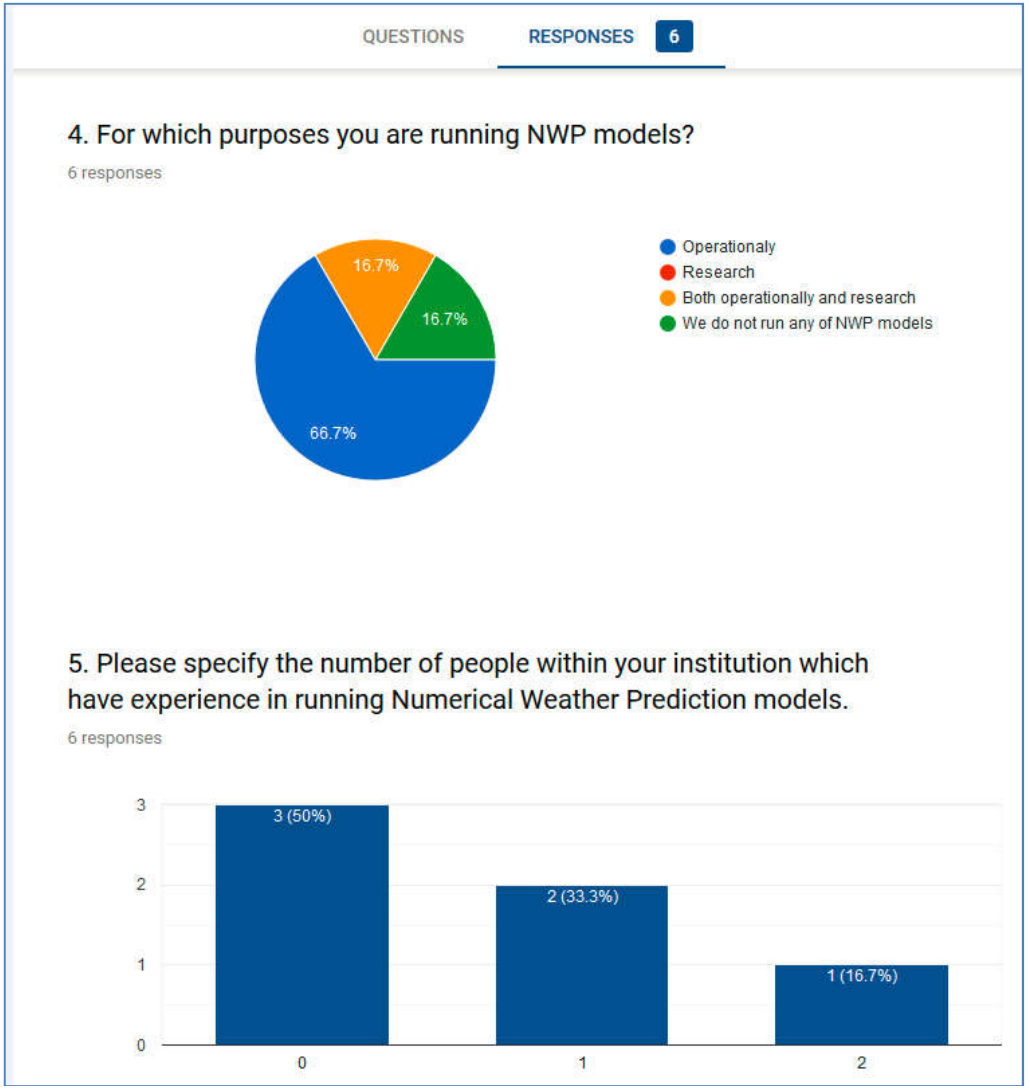
- **Travel/meeting costs: covered by participants**
- **Occasionally: some external support (CEI, WMO)**
- **In case of RHMSS, in-kind contributions:**
  - Dissemination of model products
  - Workshop organization
  - Hosting annua meetings

SEECOP questionnaire

- A questionnaire on
  - NWP activities and experiences of consortium members
  - Selection of extreme weather cases for model vaidation

https://docs.google.com/forms/d/e/1FAIpQLSfrnD6DV07UAOxH4Q262nvtveL7qZLKreQPjLZq_j5qhgSA_Q/viewform?vc=0&c=0&w=1





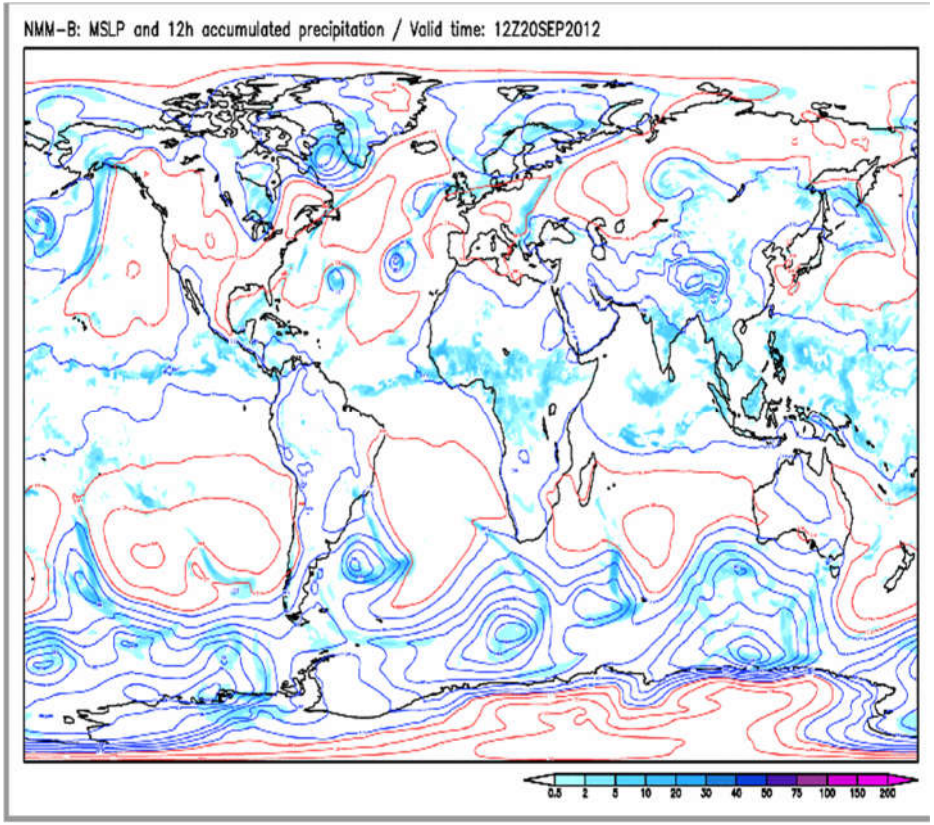
SEECOP NMM model training workshop

- 1 week training performed
- On-line exercises
- Input data; preprocessing; model; postprocessing
- Procedures for launching the model
- Written manual
- Zipped model software for participants

NWP products for SEECOP dissemination

SEECOP NMMB global model

- Global domain
- Horizontal res 0.48 x 0.36 degrees
- Vertical res 64 levels
- 10 days forecast
- Initial conditions from GFS
- daily dissemiantion through a dedicated server
- access: a web page link

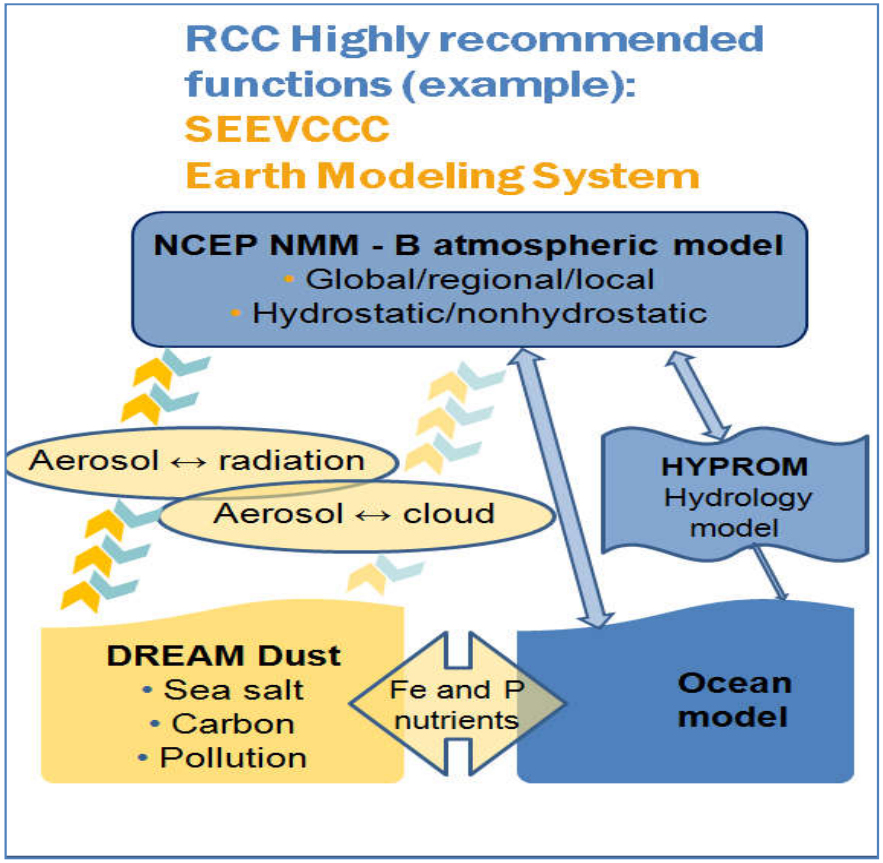


SEECOP PLANS

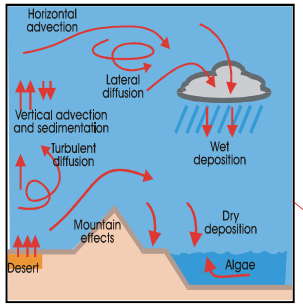
SEECOP Earth Model System (EMS) concept

– NMM used as an atmospheric driver of other Earth systems:

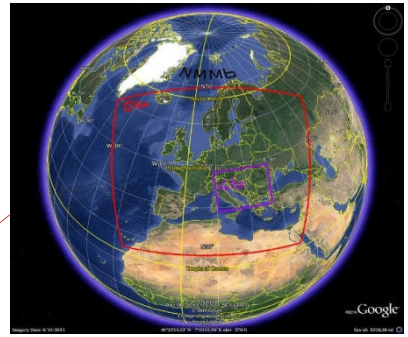
atmosphere, aerosol, hydrology, ocean, etc



Dust-cloud interaction
Ice Nucleation due to minera dust:
'Cooking' cold clouds - our recipe



DREAM model



NMMB model

Dust C

T, RH

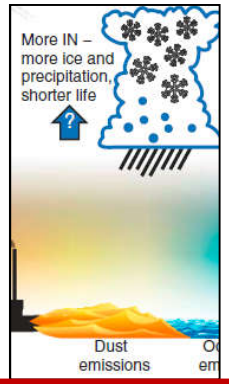
DeMott (2015) [-35°C <T<-5°C]

$$n_{IN} = C(n_{dust})^{(\alpha(273.16-T)+\beta)} \exp^{(\gamma(273.16-T)+\delta)}$$

Steinke et al (2015) [-55°C <T<-35°C]

$$n_{IN} = S_{dust} 1.88 \cdot 10^5 e^{-pT+q(RH_{ice}-100\%)}$$

n_{IN}



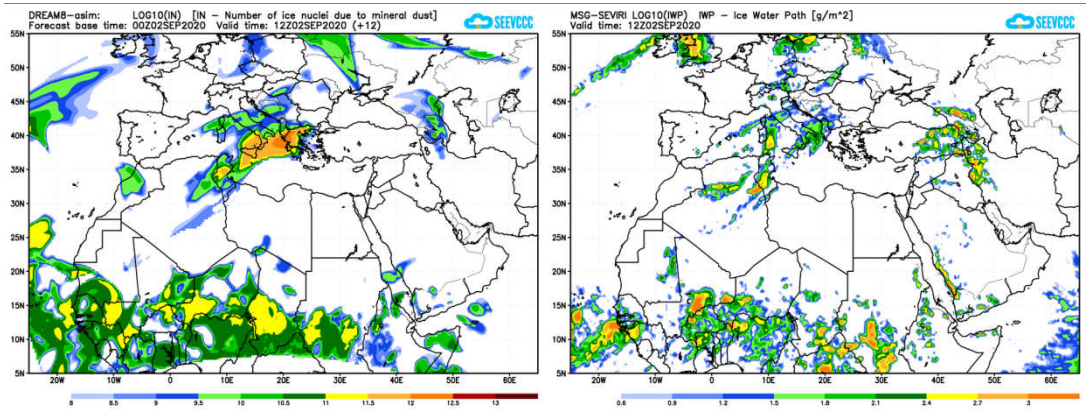
NMMB Thompson dust-friendly cold cloud micrphysics

Nickovic et al, 2016, Atmos. Chem. Phys., 16, 11367–11378

Ongoing project

Mineral Aerosol Impacts to Sub-seasonal to Seasonal Predictability

Global NMMB-DREAM (dust) model has been developed



Left: predict ice nuclei due to dust **Right**: MSG SEVIRI ice water path