

All Staff Wk – chat

Monday 27 March 2023 – Dynamic session

Roger Randriamampianina10:31 AM

Q: Maybe I missed it. In the comparison of LBC from IFS & Harmonie-Arome, is it the influence of the spinup? Because IFS has longer forecast range.

Roger Randriamampianina10:33 AM

OK, Thanks

Colm Clancy, Met Éireann10:45 AM

To clarify what I tried to say: the HARMONIE same_forecast gives better results than HARMONIE 1,2,3-hour old, so not purely forecast spin-up for those anyway

G. Nína Petersen (IMO)10:45 AM

Thank Colm!

Roger Randriamampianina11:00 AM

Thanks, and also for the very interesting talk, Colm

Monday 27 March 2023 – Surface session

Karl-Ivar Ivarsson SMHI11:55 AM

Perhaps a lower VSIQGSAT than 0.06 ?

Thomas1:42 PM

Hi Sophie, thanks for the presentation! If there were perturbed versions of ECOCLIMAP (one per member, representing the uncertainty of the physiography), would that improve in the ensemble assimilation?

Sophia Schäfer1:59 PM

Hin Kristian, great talk, thanks. Do you account for 3D effects of clouds/surface for the fluxes or the horizontal/normal partition?

Tuesday 28 March 2023 – MQAA session

Roger Randriamampianina9:08 AM

Very good. Thanks a lot. Eoin

Daniel Yazgi9:35 AM

Thank you Joel. using FSS a model is considered skilful if fss crosses some value based on the fraction of observation in the domain. At what value of dsn we consider the model skilful?

Samuel Viana9:57 AM

Thank you Simona. I see from your talk and Eoin's, that there is a diversity of local tools or methods developed to load point observations into HARP (from OBSOUL, from ODB, from local databases as in Geosphere). I think it is much needed some kind of homogeneization and integration of these methods into HARP. Thanks!

Thomas10:19 AM

Thanks Florian! Does SCOOPS run well on accelerators (i.e GPUs)?

GEBHARDT Christoph11:06 AM

The nomination of user representatives is a good approach, because dedicated working hours for providing the feedback is crucial for such an approach. I assume that these representatives will be members of the forecasting departments. Did you already communicate your ideas to the heads of forecasting departments and how did they react?

Tuesday 28 March 2023 – EPS session

Marvin Kaehnert (MetNo)3:47 PM

It would be great if Carl could present this tool!

Wednesday 29 March 2023 – Code & system session

Thomas Rieutord8:53 AM

Thanks Roel! Why did you prefer Github over the other platforms?

TROJAKOVA Alena9:19 AM

Nice talk ! I wonder why there are more and more part of the common code externalized (ectrans, fiat,...) ? What are expected benefits ?

Peter U (DMI)9:42 AM

Thanks Philippe! You said GPU performance / dollar is so far looking disappointing for these codes, do you know if the same is true for performance/watt?

marguina9:44 AM

Hello Peter, it is true that the cost of energy is much better for GPU; CERFACS acknowledges that GPU might be profitable for this reason

Michal Nestiak[SHMU]10:55 AM

Hi Martina. Someone control ice reservoirs ALARO with SURFEX? Last time when we do it with Martin Dian in prep_hor_isba_field.f90 there is ZF fields. Which one was from Surfex and one from model and deepes not corespond model vs surfex. $I\%XWGI(JJ,JL,JPATCH) = ZF(JJ,JL,JPATCH) * I\%XWSAT(JJ,JL) / I\%DGI(JJ,JL,JPATCH)$

Martina11:13 AM

@Mochal I don't know the answer, will forward this to @Patrick

Migght be a good idea to address this issue at the surface meeting tomorrow afternoon

Kar-Ivar Ivarsson SMHI11:31 AM

Whatr is a .fypp file? Will GDU oriented code be slower on CPU's ?

Ole Vignes11:31 AM

<https://fypp.readthedocs.io/en/stable/fypp.html>

Wednesday 29 March 2023 – Data Assimilation session

eresmaa1:00 PM

Sigurdur: what sigma0 value do you use for SHIP Ps observations?

eresmaa1:22 PM

Mate: Can you explain the improved O-B data fit on AMSU-A channel 9? That channel is mostly sensitive to lower stratosphere so I would not expect much small-scale variability.

Reima Eresmaa (FMI)2:05 PM

Maria: Do you at AEMET have, or plan to have, a routinely running 4D-Var setup that assimilates SEVIRI data?

jsancheza2:14 PM

Yes Reima, we will include it as the rest of the operational obs.

Mr Reima Eresmaa (FMI)3:55 PM

Do you think the validity of the linear wind field is dependent on season?

Thursday 30 March 2023 – Applications session

Balázs Szintai8:47 AM

Are you using ECOCLIMAP-SG in cy48?

Sophia Schaefer8:48 AM

Hi, thanks a lot for the great overview. Regarding the solar eclipses, are the astronomical equations included in the model and computed online, or is this done as a postprocessing?

G. Nína Petersen (IMO)9:11 AM

Good morning from Iceland. Are the results of the on demand forecasts delivered only to forecasters, or do you also deliver the results to the users through e.g. DMI website?

Matthieu Plu9:15 AM

Sorry, time is running ... may Xiaohua answer directly in the chat?

Xiaohua9:15 AM

good question Nina. The intention is to share the results to all, but due to technical limitation of NINJO backend, which requires delivery of all parameters (and not only wind forecasts), it is not used currently in the automatic forecasts.

G. Nína Petersen (IMO)9:21 AM

Thanks Xiaohua. It is indeed a challenge.

Stefan Schneider10:19 AM

Hello from Austria. How do you take into account changes in land use over the years (e.g. larger extent of cities)?

Thursday 30 March 2023 – Physics session

Karl-Ivar Ivarsson, SMHI11:12 AM

Could the too temperatures in the analysis be the same problem seen for the runs with new SURFEX physics ?

Simon André 11:35 AM

Did you check the occurrence of graupel at surface in wintertime? In AROME it happened in the past that snow was falsely represented as graupel.

Rafiq Hamdi 11:54 AM

@Radmila: did you make some sensitivity test on the number of atmospheric levels used?

Zeynep Feriha Ünal - TSMS 1:41 PM

Great talk, Laura! Very interesting questions, thank you!

Sophia Schaefer 2:06 PM

Hi Peter, great overview, thanks! And great idea with the coarser SPARTACUS + fine-grid info. Are there any plans for using resolved 3D (e.g. with LMU's TenStream)?

Sophia Schaefer 2:07 PM

Also, do you know if the SPARTACUS 3D runs had any retuning? In ICON, just plugging it in changed global climate bias by 4 W/m^2 , RMSE by 7 W/m^2 , so would need retuning. Thanks!

Simon André 3:16 PM

For the noise in stratosphere, did you try sponge or tune the horizontal diffusion?

Sophia Schaefer 4:06 PM

Technical question: does AROME not use a radiation grid at the moment?

Peter U (DMI) 4:07 PM

not a separate one, I don't think so

Peter U (DMI) 4:08 PM

in the IFS, the interpolation to a coarse grid and calling radiation_scheme happens in ifs/phys_radi/radintg.F90

Sophia Schaefer 4:10 PM

Thanks!

Sophia Schaefer 4:13 PM

At 10 km, deep convection is resolved, so there will still be a resolved 3D effect. In that sense, even coarser might be more consistent, but then other variables (temperature, humidity) are also less well resolved

Sophia Schaefer 4:16 PM

For the orography, MeteoSwiss has a solution with resolved +sub-grid heterogeneity (depending on scale)

Peter U (DMI) 4:23 PM

Sophia, would it be possible to extend SPARTACUS-Surface to include orography - peaks instead of buildings - or can it already do that? :D

I guess it's a bit more complicated for orography

Friday 31 March 2023 – Physics session

GEBHARDT Christoph 9:27 AM

Interesting approaches with advantages to think about (e.g. speed-up, member generation, graphcast mesh). The question is however, whether the claim "data-driven/no physical model" is appropriate if ERA5 is used as "observations" for training, which is a model-based re-analysis? What would this mean regarding the interpretation of the results, areas of application?

By the way, great meeting! Greetings from COSMO consortium

Peter U (DMI) 9:34 AM

Thanks for a nice overview. I just wanted to point out that a big reason the ML weather models are so much faster is that they use a huge time step (6 hours). It's a shame dynamical models require small time steps to be stable (CFL)!

Marvin Kähnert 9:35 AM

Great talk, maybe I missed it but how do these networks generate the ensemble members that differ from one another? Can they represent the non-linearity in some way or do they introduce "some" noise?

Matthew Chantry 9:36 AM

@Marvin, currently none of these models have any model uncertainty in their uncertainty, they only use initial condition uncertainty.

Marvin Kähnert 9:37 AM

@Matthew alright thanks

Sophia Schäfer 10:10 AM

Hi, great talk, thanks!

Two questions on the ecRad emulator: is there a way to determine what the cloud assumptions in the RNN are? As this is one of the major sensitivities.

Also, is it possible to check energy conservation?

Peter U (DMI) 10:14 AM

@Sophia our emulation strategy does not decouple clear sky and cloudy computations. assumptions are whatever is in the data / inputs. Usually, you would not sample different cloud overlap assumptions for instance, so the emulator is much less flexible than ecRad not sure if that answered your question

Sophia Schäfer 10:15 AM

yes, thanks

Mate Mile 10:17 AM

I'm wondering why does the Pangu have this upturned KE spectra at the smallest scales?

Matthew Chantry 10:18 AM

@Sophia, in Peter's formulation energy is conserved.

@Mate I think this is a grid artefact from the convergence of lat-lon points near the poles.

Peter U (DMI) 10:19 AM

yes, we predict up and down fluxes and normalize the SW fluxes by incoming flux at TOA

Mate Mile 10:21 AM

@Matthew, thanks

Friday 31 March 2023 – Closing session

none