Dear all,

we are happy to announce a NWP-Seminar:

Title: **A first look at MeteoSwiss' own Machine Learning Weather Forecasting Emulator**
Date: 23 January 2025
Time: 11-12h
Place: MeteoSwiss, Zurich Airport, OPC 1, Room 5-331
Online: see Microsoft Teams link at the bottom of this text

Speaker: Alberto Pennino (MeteoSwiss)
Abstract:
With the rapid advancements in Machine Learning for weather forecasting, we present the initial results of a regional data-driven emulator for the Swiss Alpine domain. Our model builds on MET Norway's recent developments in the stretched-grid limited-area model (LAM) approach, leveraging graph neural networks to enable flexible, multi-resolution grid configurations. This approach allocates higher resolution to a specific regional area of interest while maintaining lower resolution elsewhere on the globe.

Our emulator is trained on COSMO reanalysis data to produce forecasts at 2 km spatial and 6-hour temporal resolution. The training process employs a transfer learning framework: the model is pre-trained on 43 years of global ERA5 data at progressively finer resolutions (100 km and 31 km) and further refined using 4 years of operational analyses at 2 km resolution. One year of re-analyses data is held off for verification.

In this seminar, we showcase the first results of the trained emulator and provide an initial verification of its performance.

External guests: If you wish to attend, please send a short note as a reply to this mail. Please arrive at the reception desk at the Operations Center 1 Entrance A no later than 10 minutes before the start of the seminar and ask for name of the organiser of the NWP Seminar (normally the person who distributed this invitation). You will be picked up at the entrance.

You cannot attend but are interested in the seminar? All seminars are recorded and can be found on our NWP Seminar Confluence page here: https://meteoswiss.atlassian.net/wiki/x/4wsfBw

We are looking forward to seeing many of you!
Numerical Prediction division of MeteoSwiss