EMD Webinar 2018-01-16:

EMD-WRF ERA5 – On Demand

EMD International A/S
Niels Jernesvej 10
9220 Aalborg Ø, DENMARK
tel.: +45 9635 4444   fax: +45 9635 4446
e-mail: emd@emd.dk   web: www.emd.dk

Questions Submitted During the Webinar

Question	Answer
Is a comparison with the EMD-ConWx performance available?	EMD-ConWx has the same performance as EMD-WRF ERA-I presented in the validations, it is fundamentally the same model setup.
EMD-ConWx data is not discussed in this seminar, what is a main difference between EMD-ConWx data and ERA5, which one is better?	EMD-ConWx is a pre-run dataset based ERA-Interim. This will be replaced by a pre-run European EMD-WRF dataset based on ERA5 during 2018.
Will ERA5 replace ERA-Interim as input to EMD-ConWx Mesodata?	EMD-ConWx is a pre-run dataset based on ERA-I. What we presented is our mesoscale EMD-WRF on-demand setup using ERA-5. We will release a EMD-ConWx replacement later in 2018 based on EMD-WRF ERA5.
Can I understand EMD-ConWx is still better than ERA5?	We still recommend EMD-ConWx as compared to raw ERA5 due to the 10-fold higher spatial resolution, which captures important finer scale effects. But EMD-WRF ERA5 shows consistently higher correlations than EMD-WRF ERA-Interim (and EMD-ConWx which is the same setup).
Is ERA5 an option to EMD-ConWx?	Please see answers above.
Can we use ERA5 data for Extreme wind speed analysis?	The data can provide valuable long-term info on storm occurrence input to the extreme wind analysis, but in general mesoscale data should not be used directly in extreme wind calculations.
For the 107 masts, what's kind of the location topography? flat/complex?	The topography is quite diverse as real life sites and varies from flat to complex.
Can I use EMD-WRF ERA5 for Icing calculations?	Yes, definitely – all parameters needed for icing calculations are already available from the current modelling setup. We expect to have an ISO12494 compliant icing model available later this year – and are now working to fine tune the EMD-WRF setup for this specific application.
Should we always consider ERA5 or MERRA2 only after 2005 (due to inconsistency due to additional observational information), or is a simple change-point analysis or moving average analysis sufficient to confirm the consistency of a longer dataset (e.g. since 1997)?	Good question. In general, the input data inconsistency looks very bad. In reality, it turns not to be that bad over regions with many other data like Europe or N. America. However, in data sparse regions one should make careful analysis as you mention and only use the consistent part.
Did you also look into directional correlations?	Yes, and we see similar performance improvements as for the wind speed correlations.
Why are the masts with the poorest correlations with ERA-Interim the ones which improve the most with ERA-5?	Those masts are generally in data sparse areas where the improved assimilations model and new data sources make a bigger difference as compared to data dense areas like Europe.