



Challenges in high resolution NWP to meet the expectations from users of NWP regarding accurate forecasting of high impact weather.

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The production chain of processes influencing the quality high resolution NWP for a Limited area is briefly reviewed. A strong dependency exists on international collaboration, e.g. from exchange of observations in real time to be used for NWP. Optimal guidance for users of NWP in the context of high impact weather often requires supply of high frequency observations to be used in high resolution models updated frequently.

The status and evolution process of high resolution NWP in the HIRLAM consortium is reviewed. The challenge of assessing forecast quality of high resolution NWP is discussed. It is important to diagnose phase errors in both space and time in order to measure which scales are predictable. This information is also vital to communicate to the users of NWP, e.g. forecasters. The impact of a first Users' Meeting in the the context of Harmonie-Arome Limited area model system will be discussed. It turns out that adequate postprocessing products that are easy to access and to interpret are highly important.

The challenge of forecasting significant and high impact weather is illustrated from NWP examples using Harmonie-Arome over Denmark. Both high intensity precipitation, e.g. cloud bursts, and fog are mentioned as examples of challenging weather parameters in NWP. These occur on very different vertical scales in the atmosphere and have as a consequences very different requirements for the process description of the model. The impact of high resolution NWP down to hectometric grid scales in the horizontal is mentioned.

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