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HIRLAM Plans for academic research models

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Scientific secretary HIRLAM

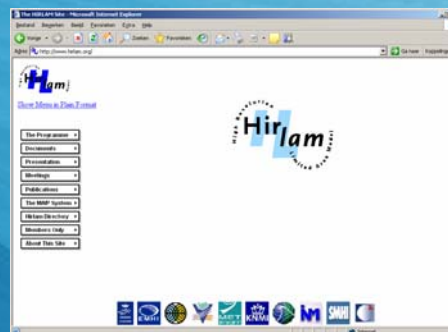


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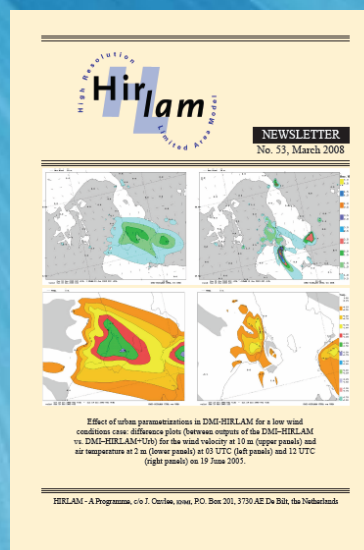
•••• Sci-sec HIRLAM tasks

- **HIRLAM.org and HEXNET**
 - Upgrade website
 - Bringing content and documentation up-to-date



- **HIRLAM/HARMONIE for universities**

- **Editor of HIRLAM newsletters and technical reports**



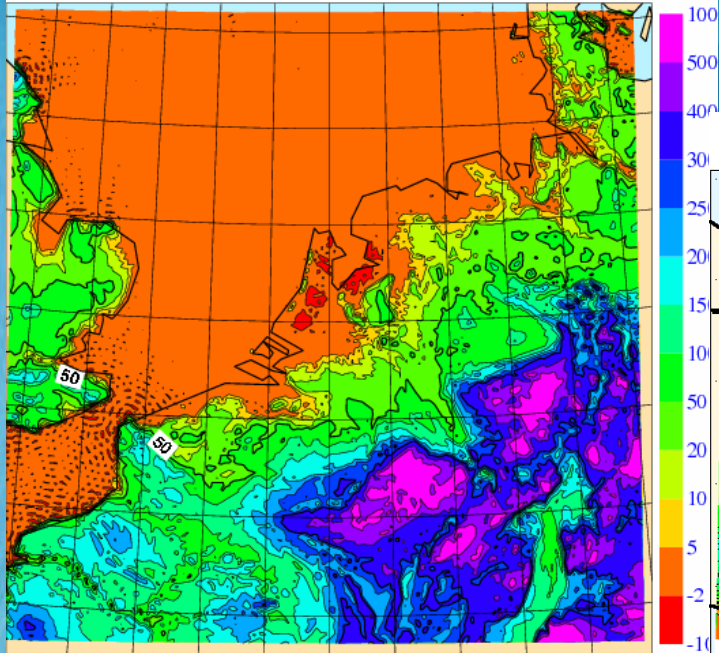
HIRLAM Newsletter no. 53, March 2008

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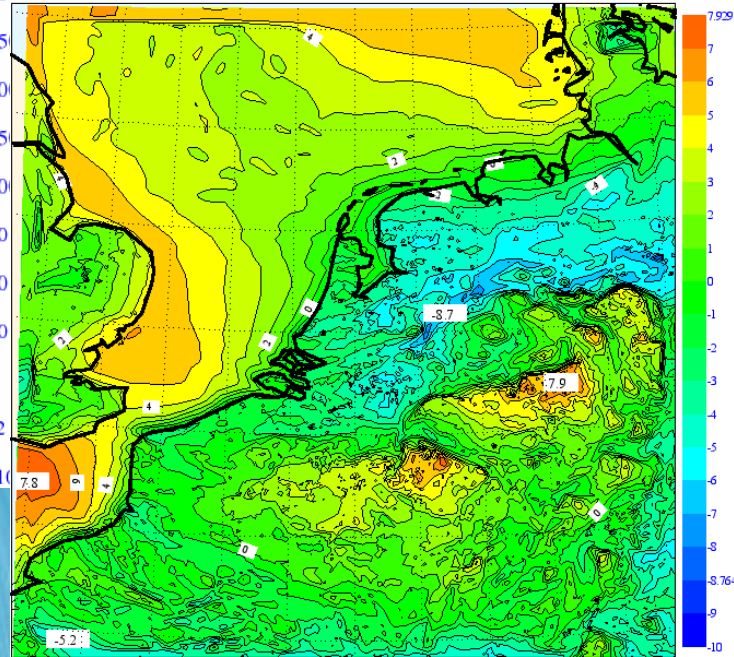
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••••• Introductie HARMONIE

"Orografie HARMONIE 2.5 km model"



**HARMONIE t+23 2m Temperature
forecast VT:23 UTC on 20 December 2007**



Doelen van HIRLAM-A (2006-2010)



Hoofddoelen:

- **Ontwikkeling mesoschaal (target hor. res. 2km) model ism ALADIN/ AROME in IFS systeem; geschikt voor operationeel gebruik in 2009**
- **Continuering ontwikkeling synoptisch (5-10km) HIRLAM systeem**
- **Ontwikkeling van operationeel inzetbaar HIRLAM EPS systeem, geschikt voor gevaarlijk weer (2009)**

Nevendoelen:

- **Uitbreiding van zuiver atmosfeermodel naar meer geïntegreerd "earth system model"**
- **Versterken terugkoppeling gebruikerswensen naar het HIRLAM programma**
- **Onderzoek mogelijkheden voor versterking operationele samenwerking tussen HIRLAM instituten**
- **Versterken rol van HIRLAM als gereedschap voor regionale**
 - **klimatemodellering.**



..... Mesoschaal ontwikkelingen



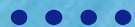
Mesoschaal analyse- en verwachtingssysteem: **HARMONIE**

(= **HIRLAM-ALADIN Research on Mesoscale modelling for Operational NWP in Euromed**). **Gezamenlijk HIRLAM-ALADIN onderzoeksplan.**

- Geleidelijke training / omschakeling HIRLAM staf naar werken in HARMONIE, afbouw HIRLAM ontwikkelingen
- HARMONIE test-suites inmiddels opgezet in 6 HIRLAM instituten (2.5km hor. res., alleen verwachtingsmodel) **op basis van ALADIN dynamica, AROME/HIRLAM fysica**
- Uitbreiding met 3D-VAR bovenlucht en oppervlakte assimilatie: 2008
- Uitbreiding naar 4D-VAR, assimilatie radar: 2009
- Verwachtingsmodel: in 2008 nog op aantal punten verbeteren (m.n. diepe convectie, oppervlakte modellering, oppervlakte karakterisatie)
- Afstemming IFS code-ontwikkelingen met ALADIN, AROME en ECMWF: één modelomgeving van lokaal tot globaal, zeer korte termijn tot klimaat

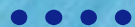
2009-2010: toepassing/toetsing HARMONIE op synoptische (5-10km) schaal. Toepassing in klimaatmodellering.

Na 2010: geleidelijke vervanging HIRLAM door HARMONIE.



••• **HARMONIE for universities**

- **Encourage the use of HARMONIE by universities and other research institutions (Common goal of HIRLAM and ALADIN)**
- **To enlarge the basis of HARMONIE (broader use, more educated researchers and more research)**
- **By making available an academic versions of HARMONIE and HIRLAM**
- **For educational purposes and research**
- **Important specifications:**
 - **Easy availability, downloading, compilation and building facilities on variety of architectures**
 - **Adequate, user-friendly documentation/instruction and test data for relevant (synthetic) cases**
 - **Easy coupling to accessible meteorological data**
- **Turn current developments and initiatives into coordinated effort for maximum benefit of limited manpower**



••• Preliminary Workplan

- Phase 1:
 - Make a simple version of HIRLAM fc, data assimilation, 1D model and a **basic version of HARMONIE** easily available on the internet, with a minimum of necessary data to be able to run it.
- Phase 2:
 - Create more elaborate experimental cases and data for educational purposes.
 - Provide conversion tools for use of freely available data
 - Porting to new platforms/operating systems
- Phase 3:
 - Works towards a more open system environment of HARMONIE that can be used by universities for more in-depth research

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••• Work packages Phase 1

- Website functionality
- HIRLAM version
- HIRLAM data assimilation
- HARMONIE version
- Working week

•••• Work packages Phase 2

- **Work out and provide more experimental cases**
 - For HARMONIE, and
 - HIRLAM data assimilation
- **Software support/updates/maintenance**
 - User support,
 - Bugs solving,
 - Porting to more platforms,
 - Adding conversion tools,
- **Interest universities in HARMONIE**

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••• Work package phase 3

- Create version of HARMONIE with accessible physics parameterisation code (by ALADIN)