

Le système de modélisation environnementale communautaire MEC

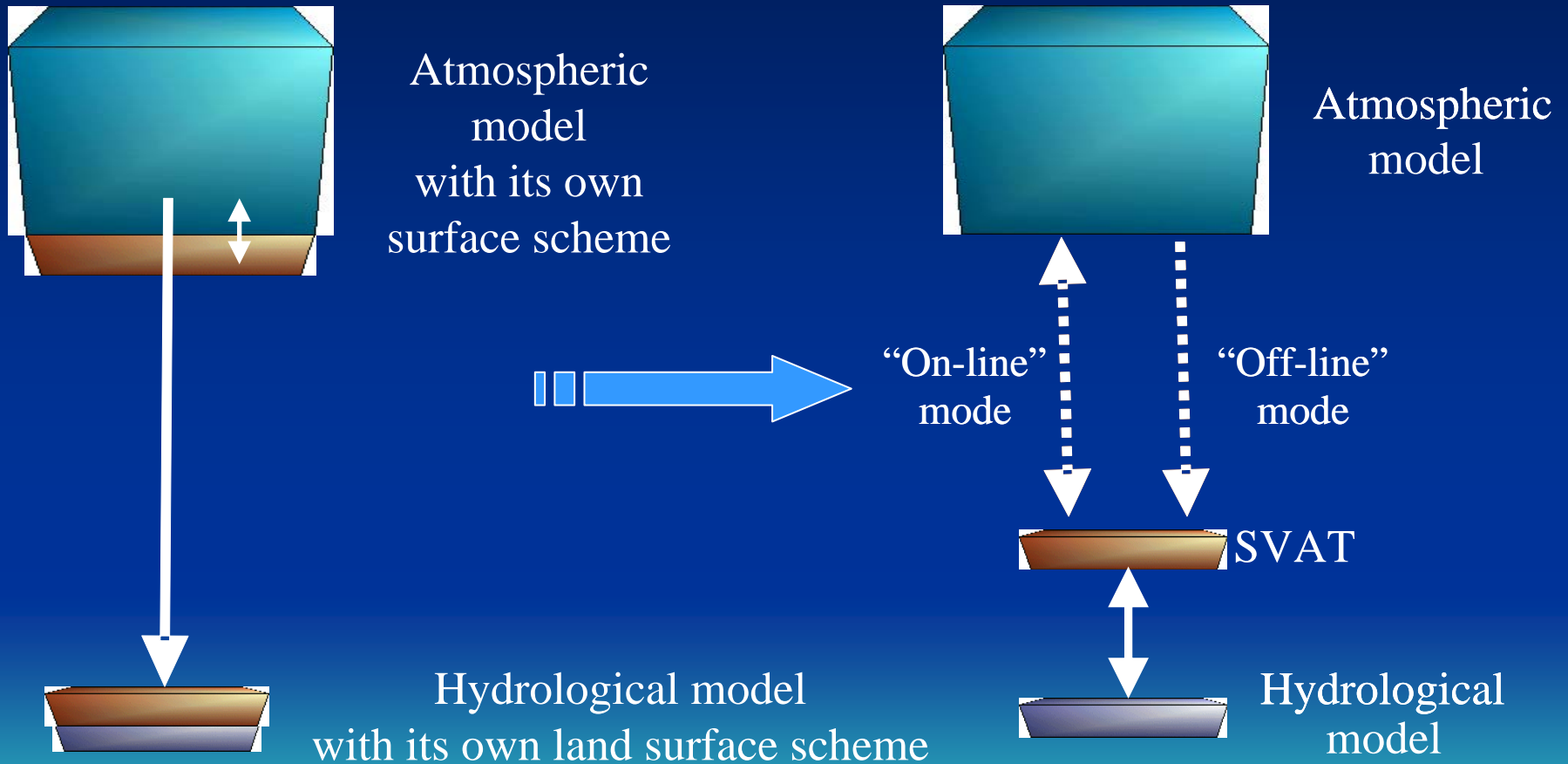
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¹ RPN: Numerical Weather Prediction Research

² NWRI: National Water Research Institute

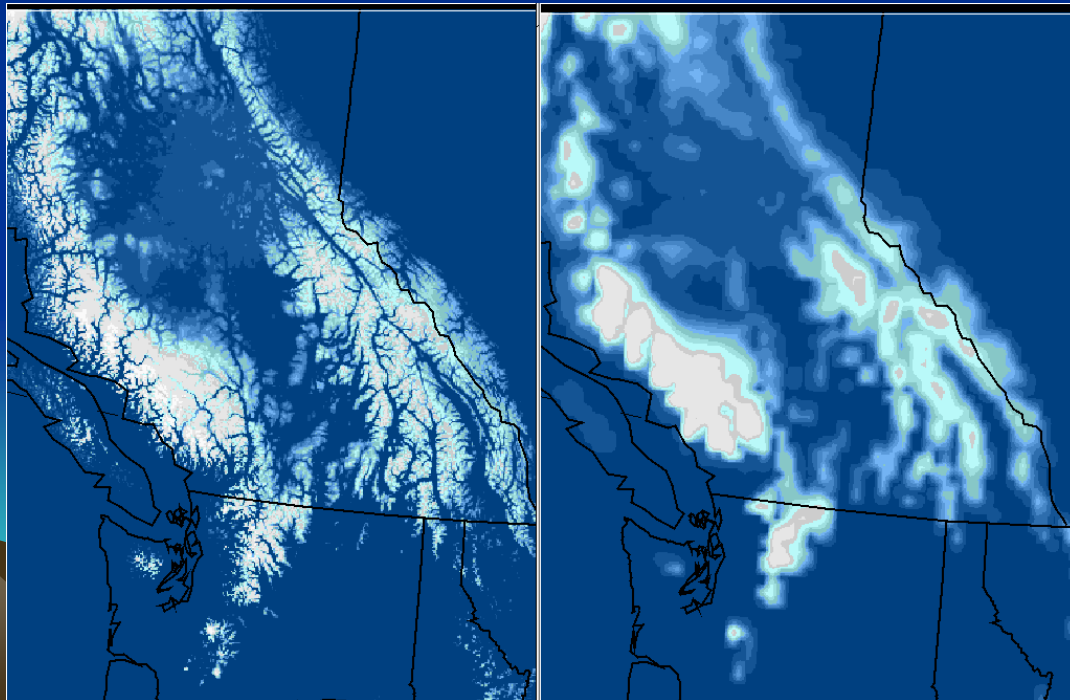
³ HAL: Hydrometeorology and Arctic Lab

The idea behind MEC: make the surface scheme an independent component from the atmospheric model



Increasing the spatial resolution of the land-surface scheme

- We anticipate a large impact on the prediction of cold processes
- We hope to be able to show that this also leads to better atmospheric forecasts



Using the offline mode to predict snow water equivalent

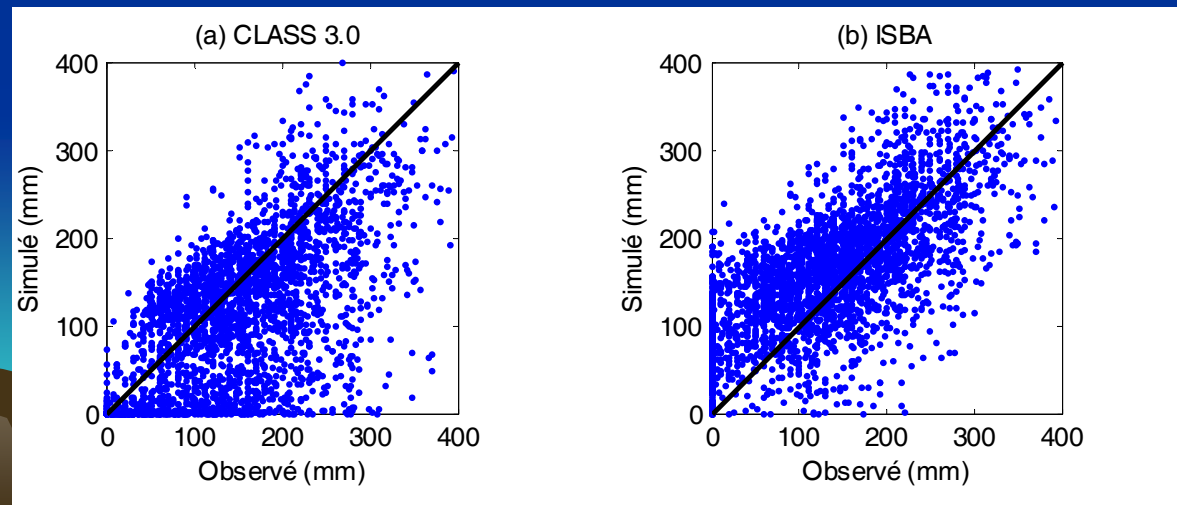
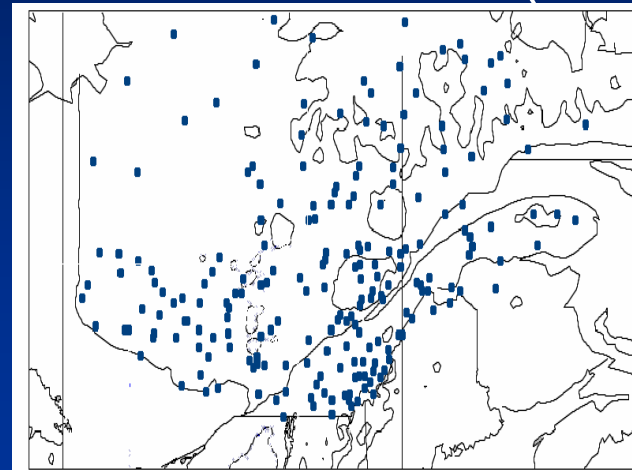
- SWE predictions in Southern Quebec (2001-05)



«offline»
mode

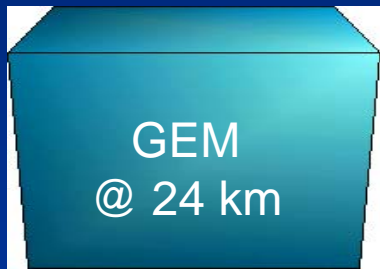


CLASS and ISBA
@ 0.1°

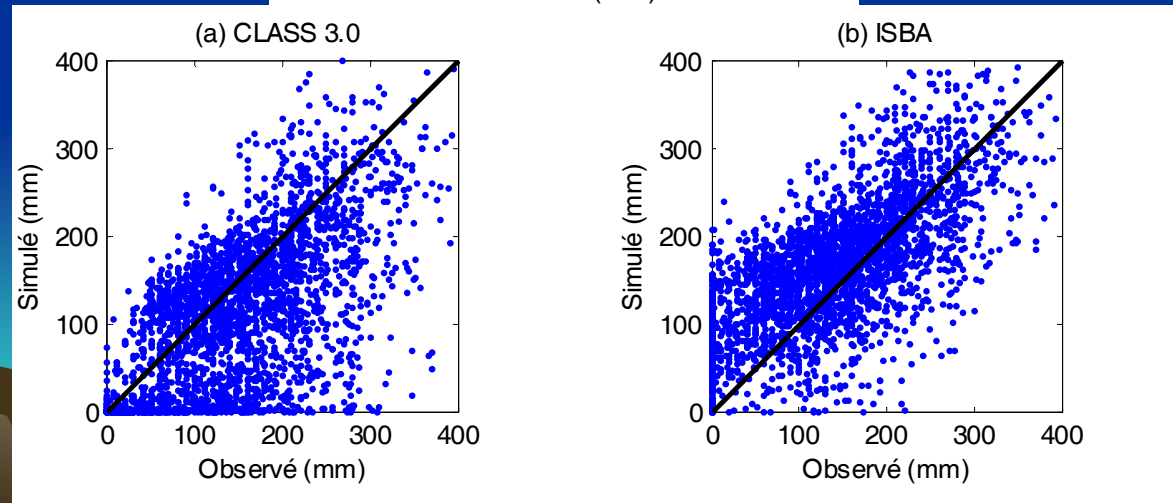
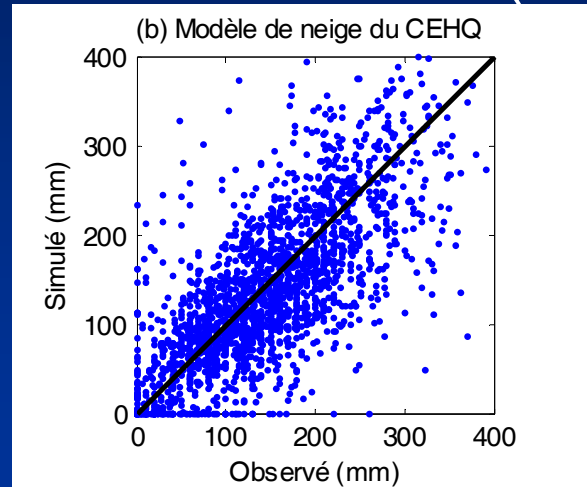


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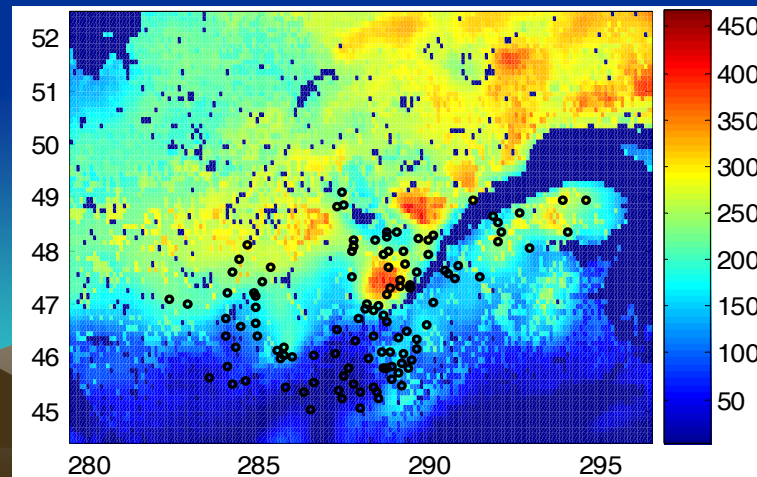
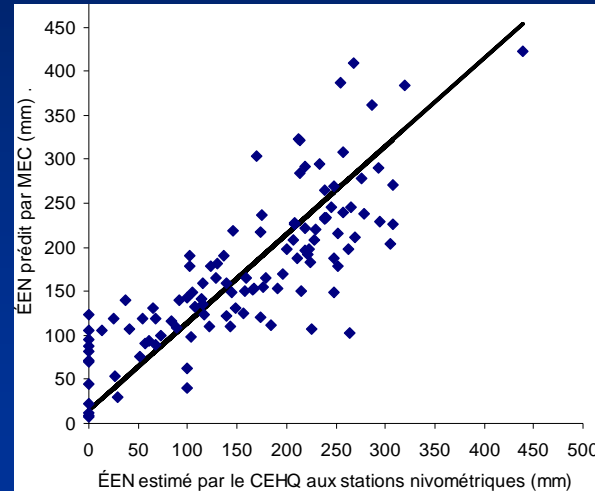


Combining MEC predictions with obs. to obtain a SWE analysis

- SWE analysis in Southern Quebec (9-04-2002)



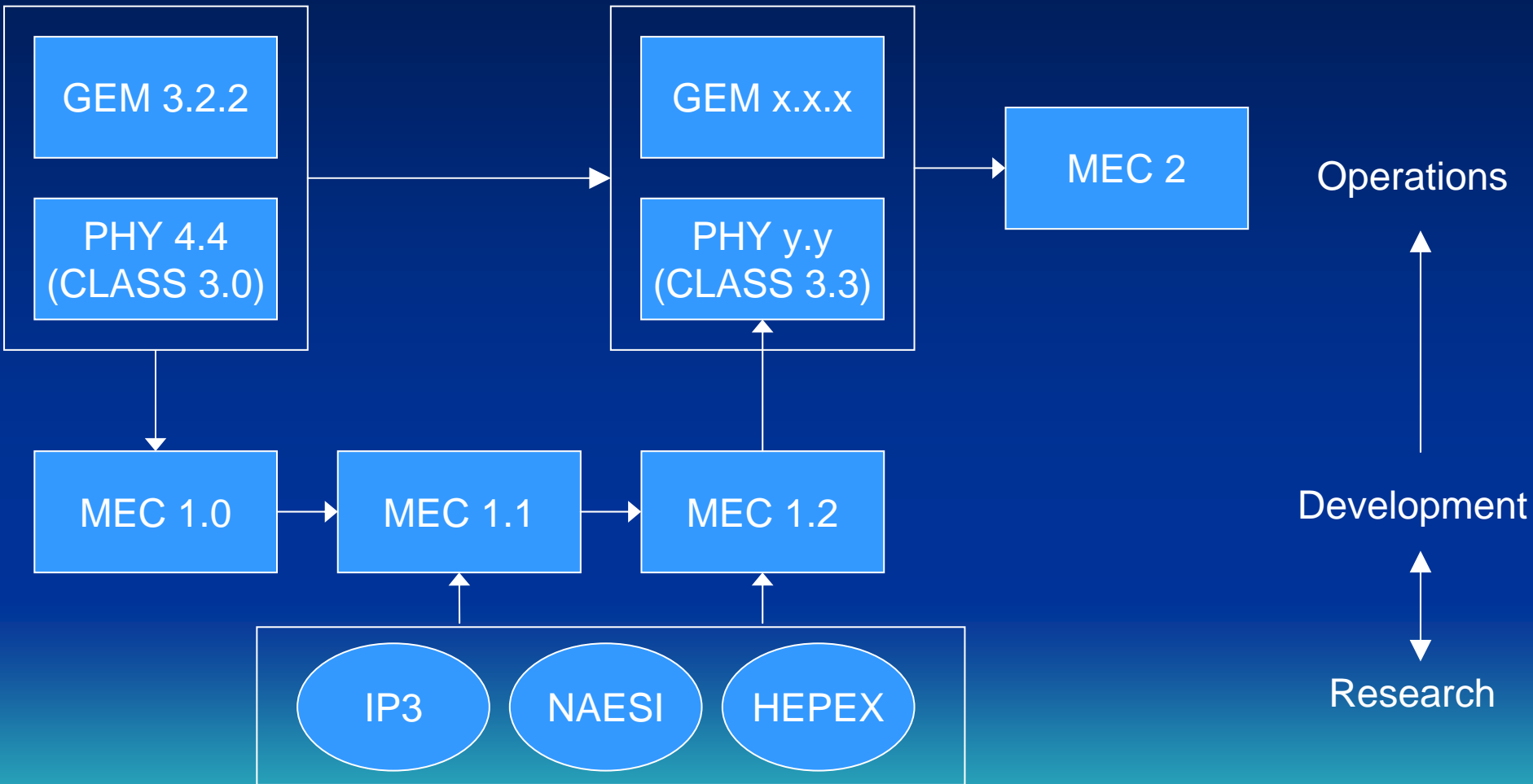
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mode



CLASS status within MEC

- CLASS 3.2 driver just completed
 - mosaic resolving land cover heterogeneity implemented
 - subdivision of the third layer not implemented
- A number of bugs have been uncovered in MEC during the development of the driver
 - we expect to solve these problems by the end of the calendar year
- In the meanwhile, CLASS 3.0 can be used

Moving towards MEC 2



Timeline

- FY 2006 – 2007: Research & Development
 - Develop a high-resolution land-data assimilation system to update the prognostic variables of the land-surface scheme using surface and satellite observations
 - Evaluate the impact of two-way coupling of the atmospheric model with a higher resolution land-surface model on atmospheric and environmental predictions
- FY 2008: Parallel NWP and EP system
 - Start using MEC for environmental and weather prediction at CMC in parallel with the existing system
 - Determine if we really make improved predictions