AMPS Status and Update

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New computing platform “pegasus”

- Generously funded by the National Science Foundation Office of Polar Programs
- 64 2-processor Opteron nodes (2.2 Ghz processors)
- Approximately ten times the computational power of the machine it replaces
- Maintained by NCAR's Scientific Computing Division

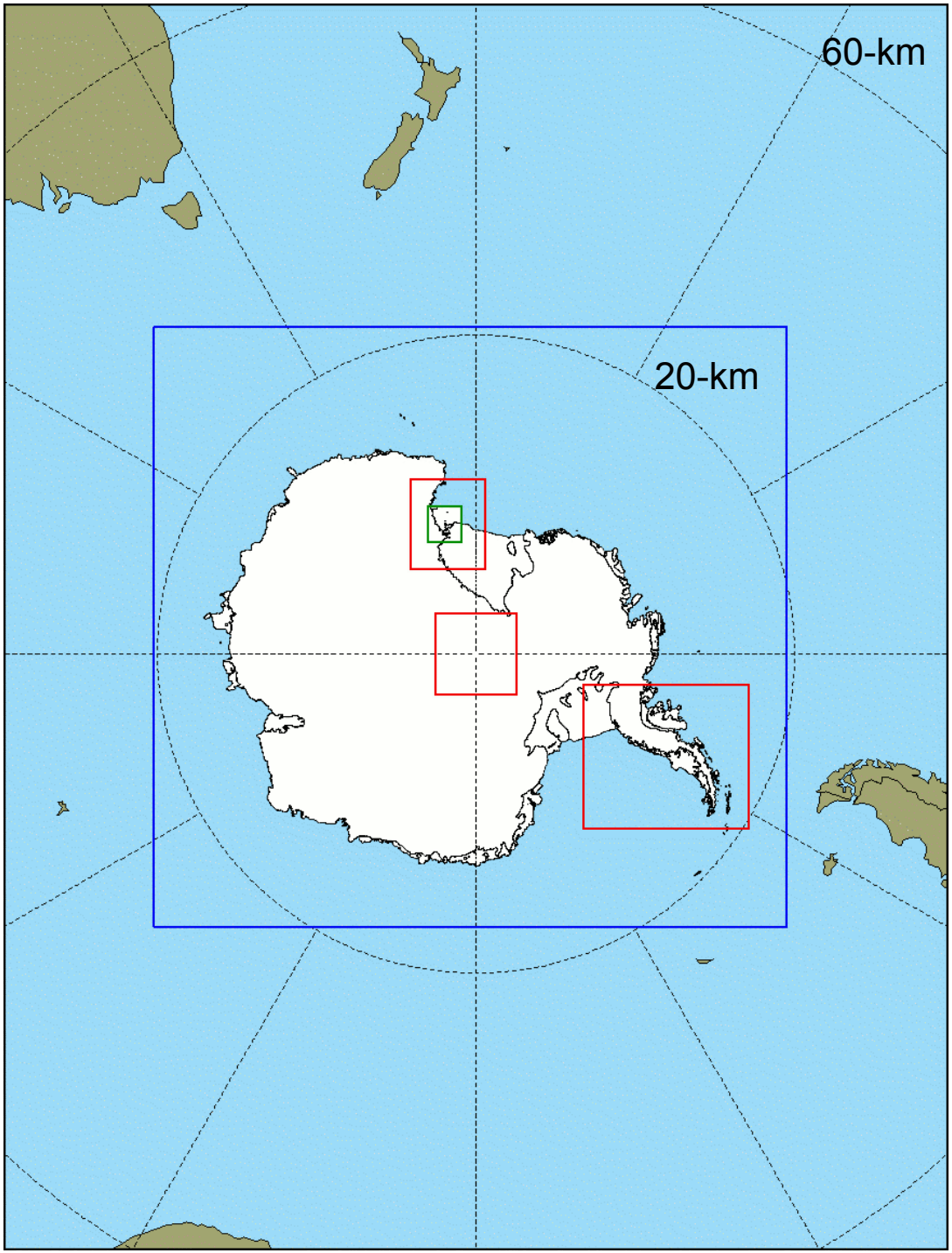
Enhancements to AMPS

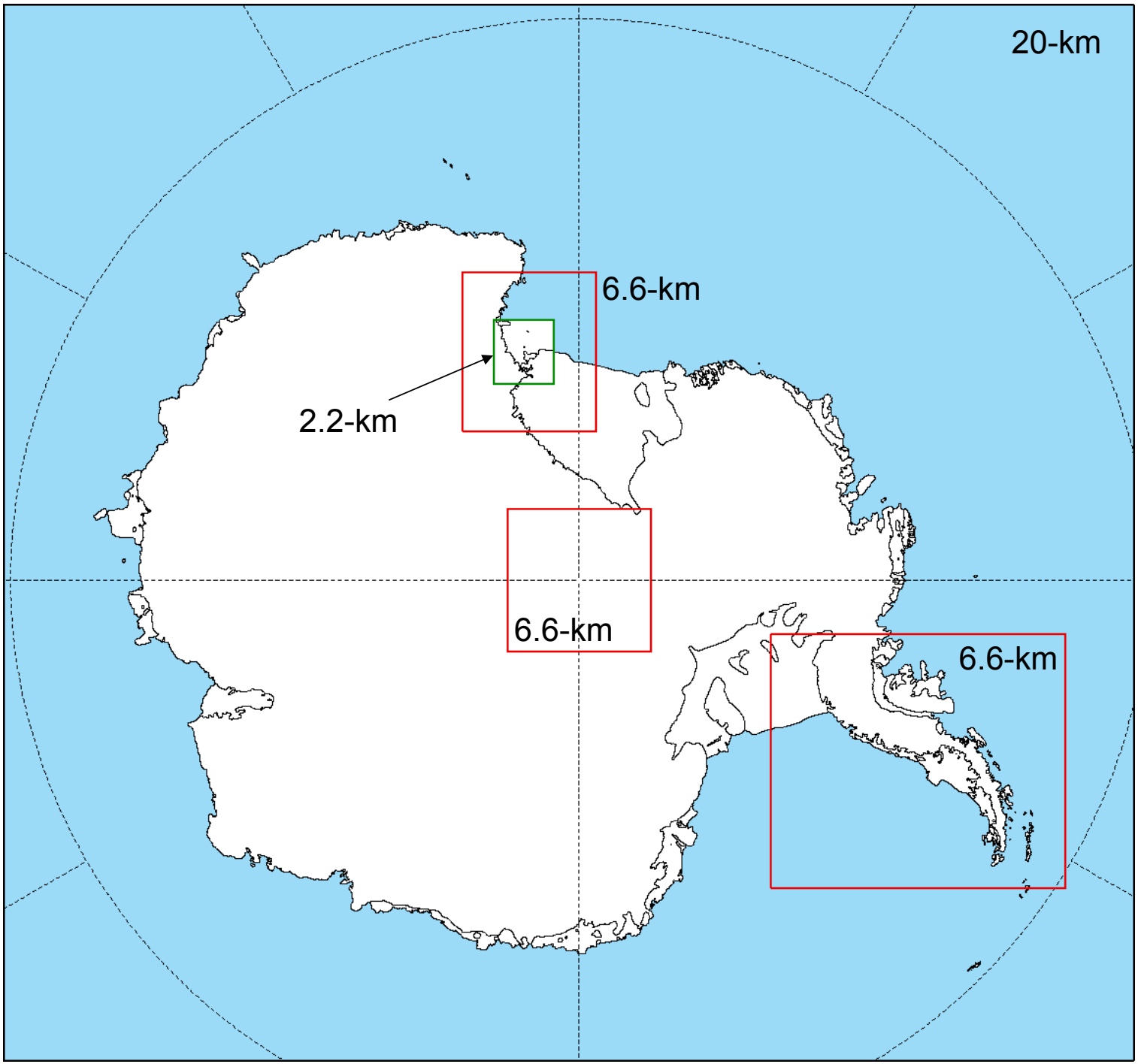
- Made possible with the additional computer power
  - Higher resolution
  - One-way nests
  - Real-time WRF

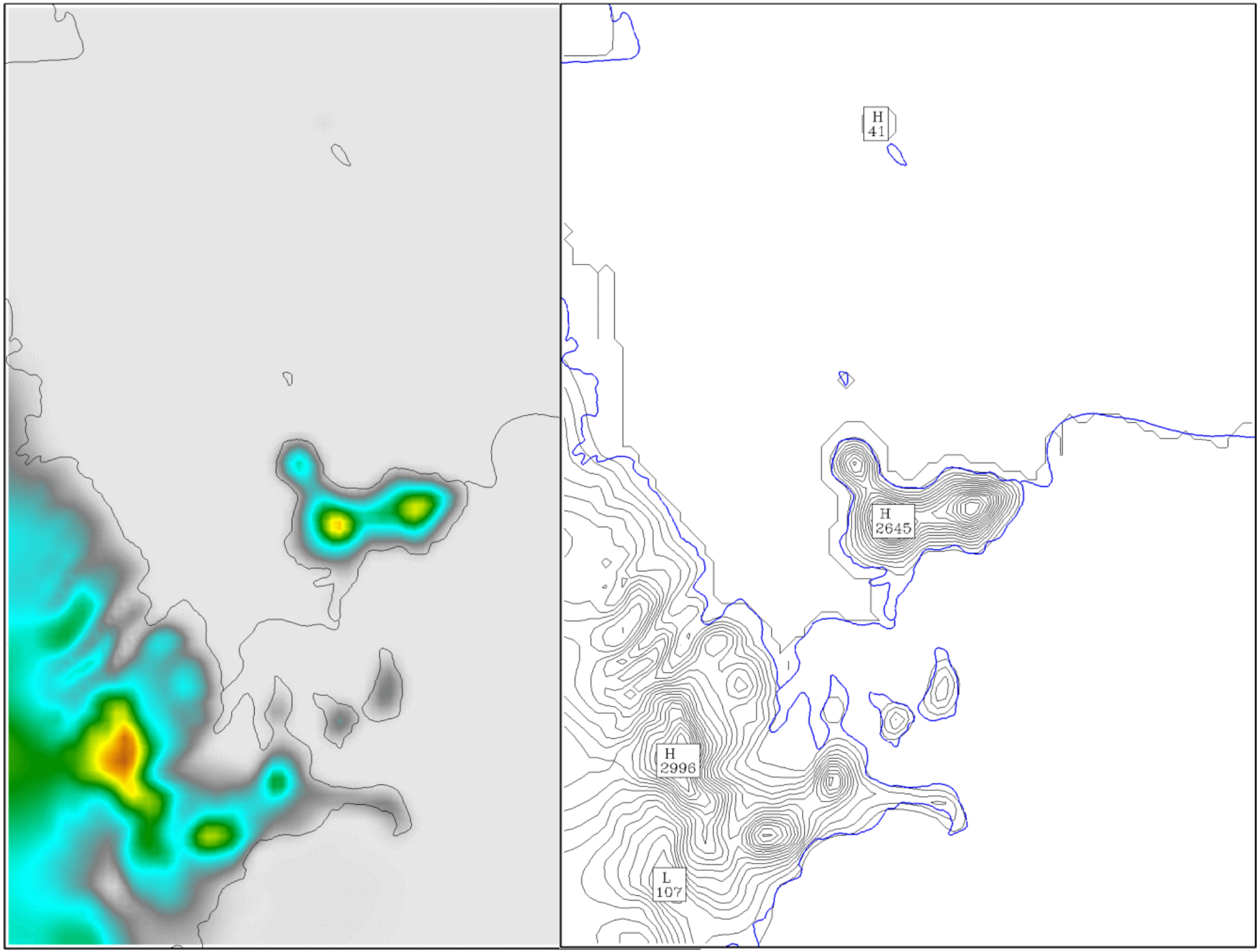
Resolution enhancement:

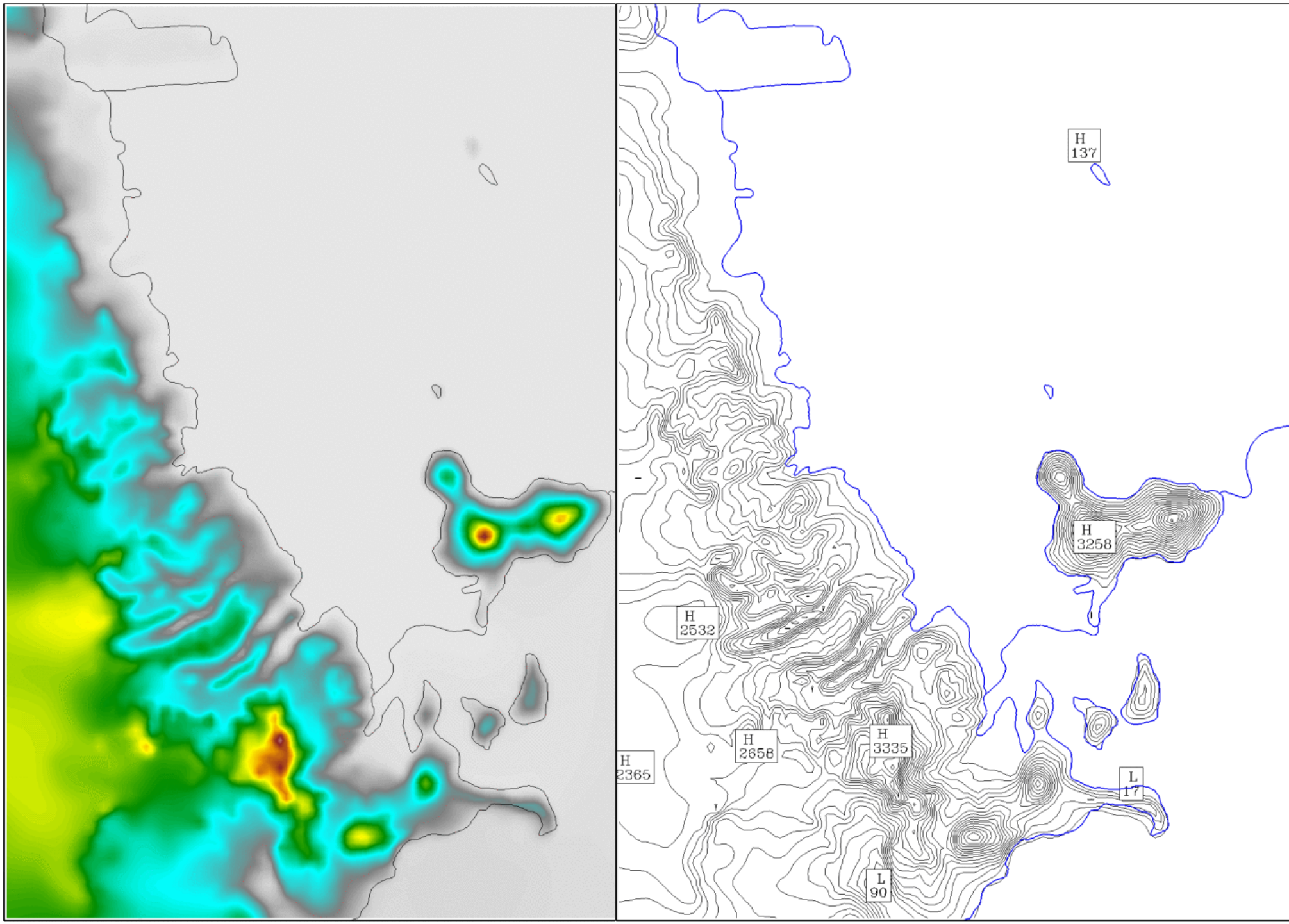
- 90-km grid → 60-km
- 30-km grid →20-km
- 10-km grid → 6.6-km
- 3.3-km grid → 2.2km

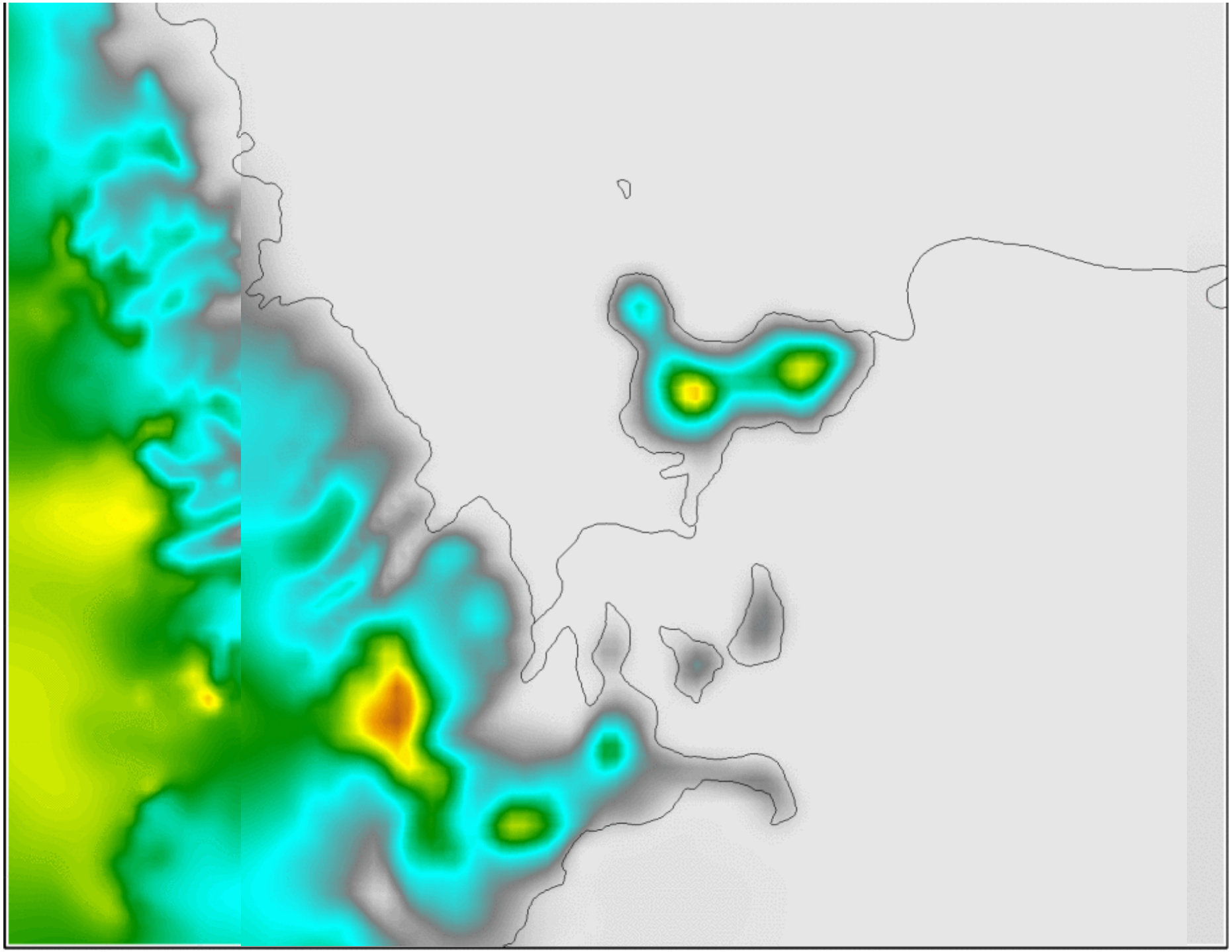
- Multiplies computational needs by about six
- Wallclock time about 3:30




20-km
6.6-km
2.2-km
6.6-km
6.6-km

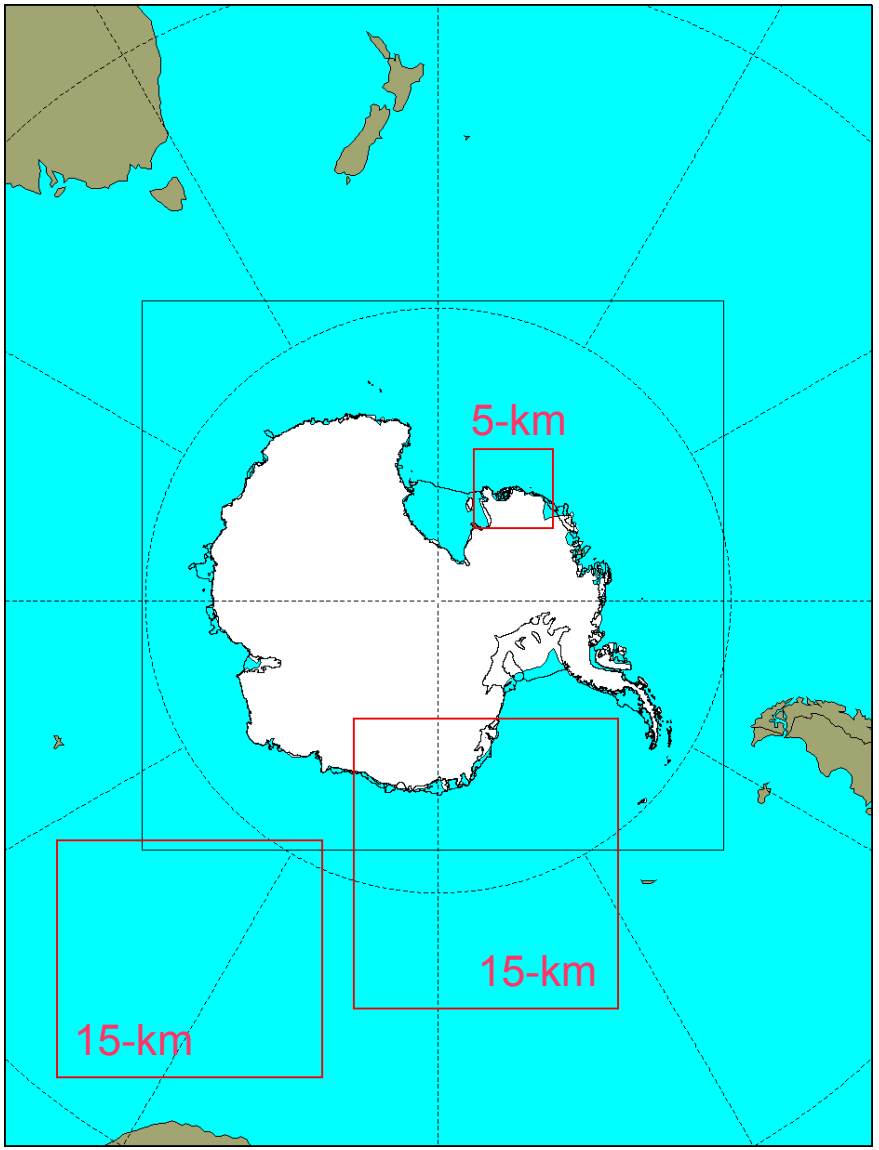

H
41
H
2645
H
2996
L
107


H
137
H
3258
H
2532
H
2658
H
3335
H
2365
L
17
L
90



Enhancements – One-way nests

- Run independently, after MM5
- Allow for greater flexibility in offering high-resolution grids



Enhancements – Real-time WRF

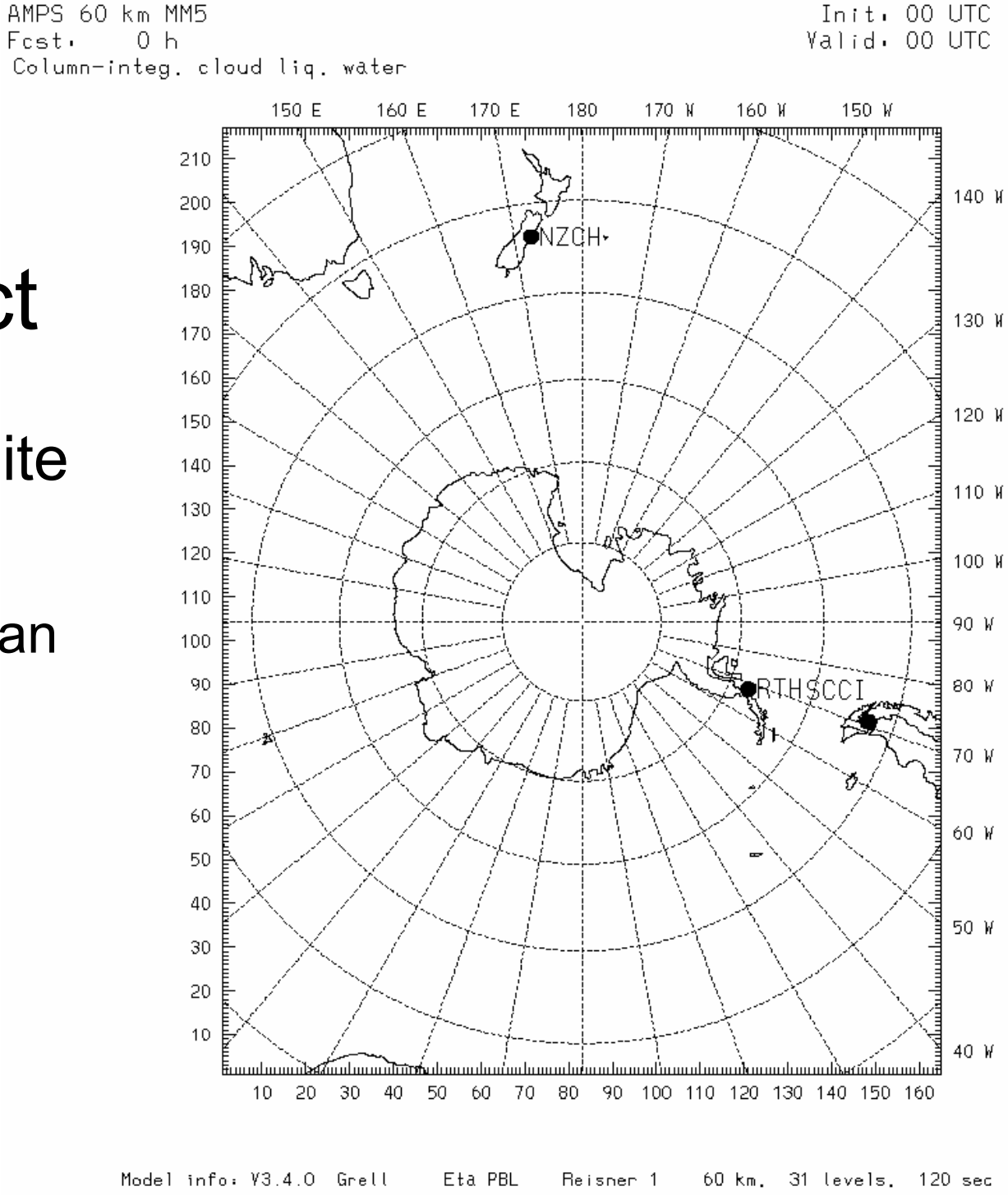
- Grids configured similarly to MM5 setup
- Runs after MM5 and any one-way nests
- Wallclock time about 2:45 (~20% faster than MM5, with nests active longer than in MM5)

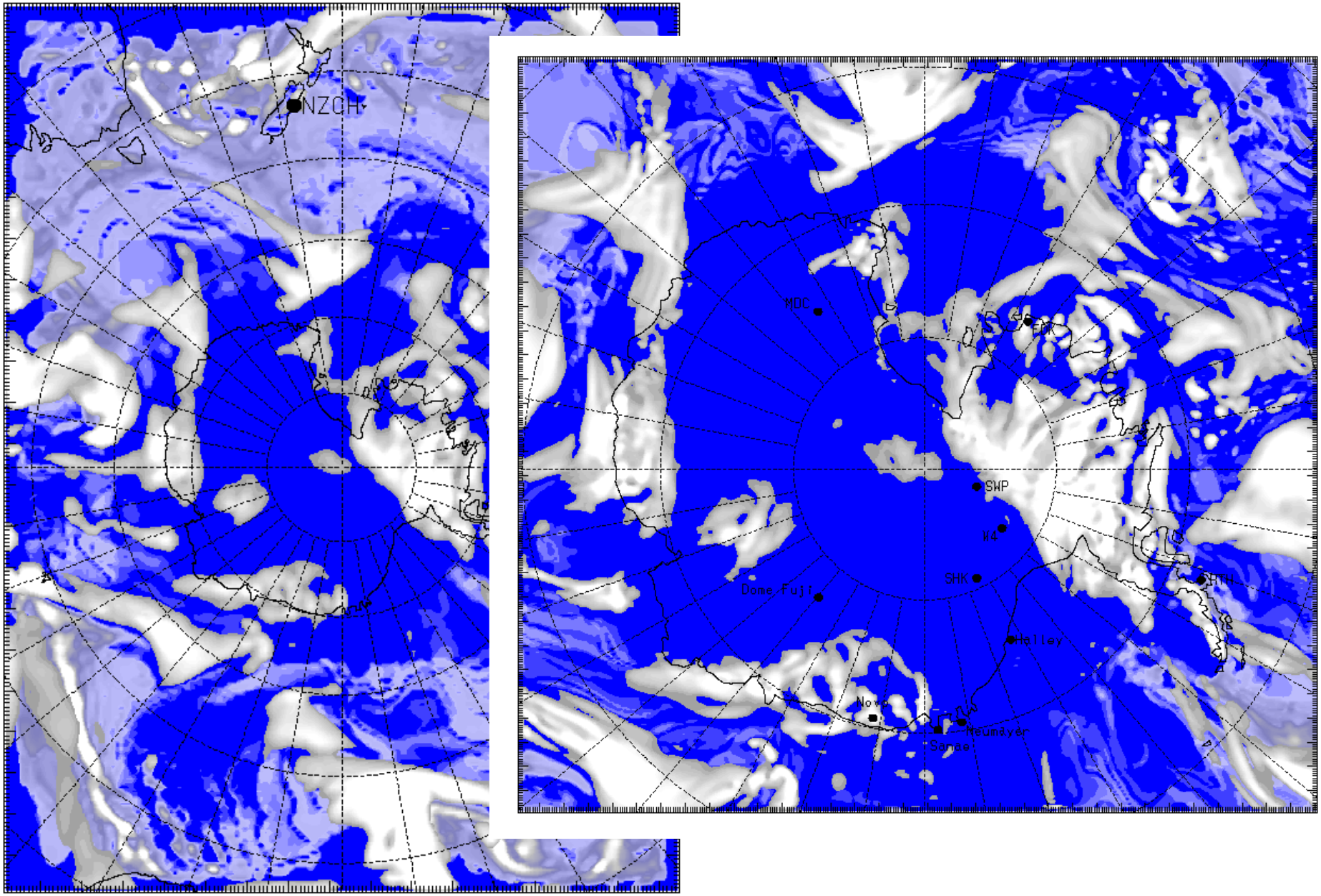
WRF – Lessons

- Stable
- Fast
- WRF-SI difficulties (initialization procedure)
  - Some ad-hoc workarounds in place now
- Performance “comparable” to MM5

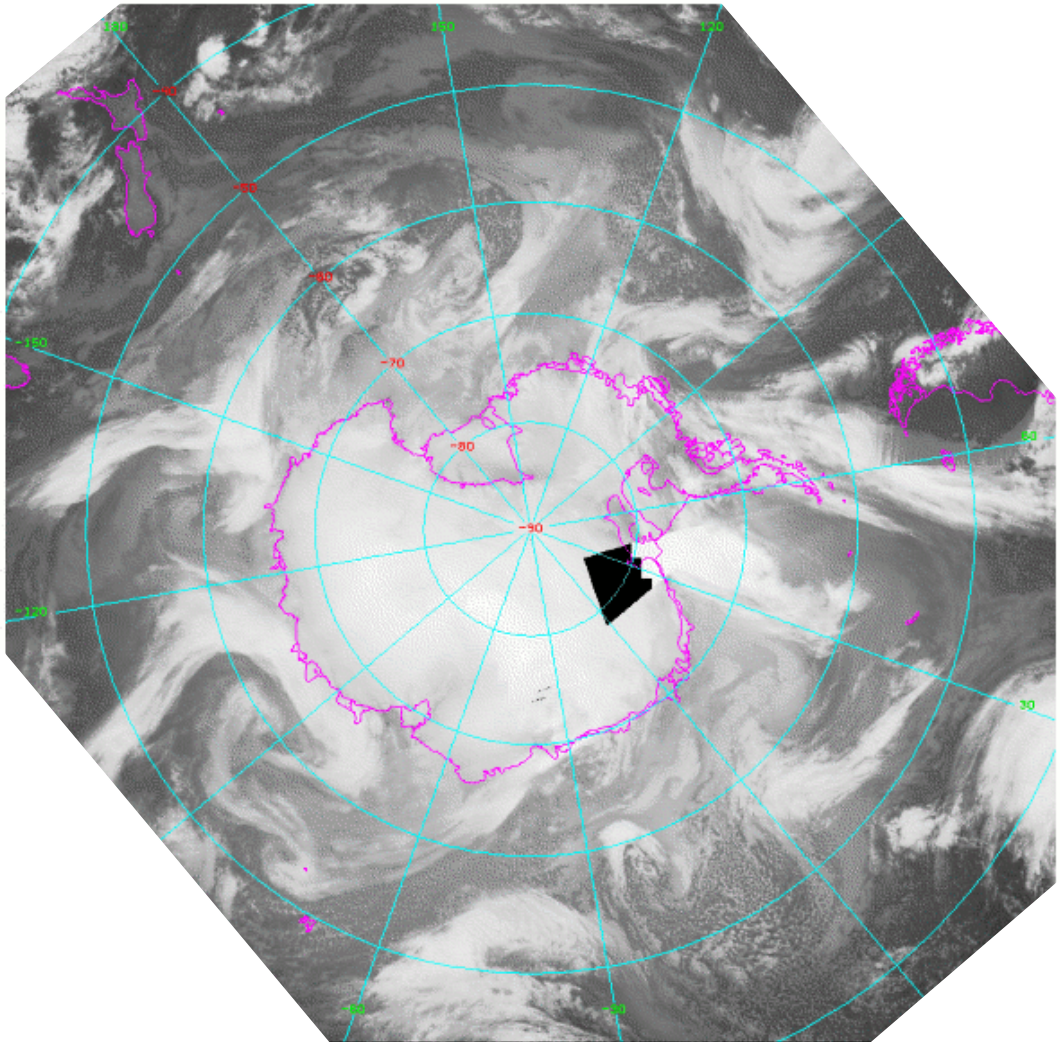
New Product

- Pseudo-Satellite graphics
  - Thanks to Ryan Fogt at OSU-BPRC




NZCH
NDC
SCO
SWP
M4
SHK
Dome Fuji
Halley
Neumayer
Sanae

Is there the possibility for some interesting and creative validation against AMRC composite satellite images?



Future

- Immediate future
  - COSMIC Soundings – this summer
  - Filtered MODIS winds – this summer
- Longer term
  - Renewal of AMPS project
  - WRF development
  - 3DVAR development
    - AIRS radiances (Atmospheric Infra-Red Sounder)?
    - Cycling?