

# P3-v5.3.13

HRDPS validation in GEM5.3.10-a10 and PA3a configuration

# v5.3.12 vs. v5.3.13

Note: Lookup table 1 for v5.3.13 are the same as for v5.4.3, it just reads in a few more dummy (columns) that are used for full3mom and prognostic aerosols.

## Difference

- Bugfix to collection rates in all lookup tables.
- New lookup table version:
  - LT1: from 6.6-2moml, 6.6-3moml to 6.9-2moml and 6.9-3moml
  - LT2: from 6.1 to 6.2 (only bug for collection rates)

### History of LT1:

6.6 → for P3v5.3.6 to P3v5.3.12

6.7 → includes full3mom new columns

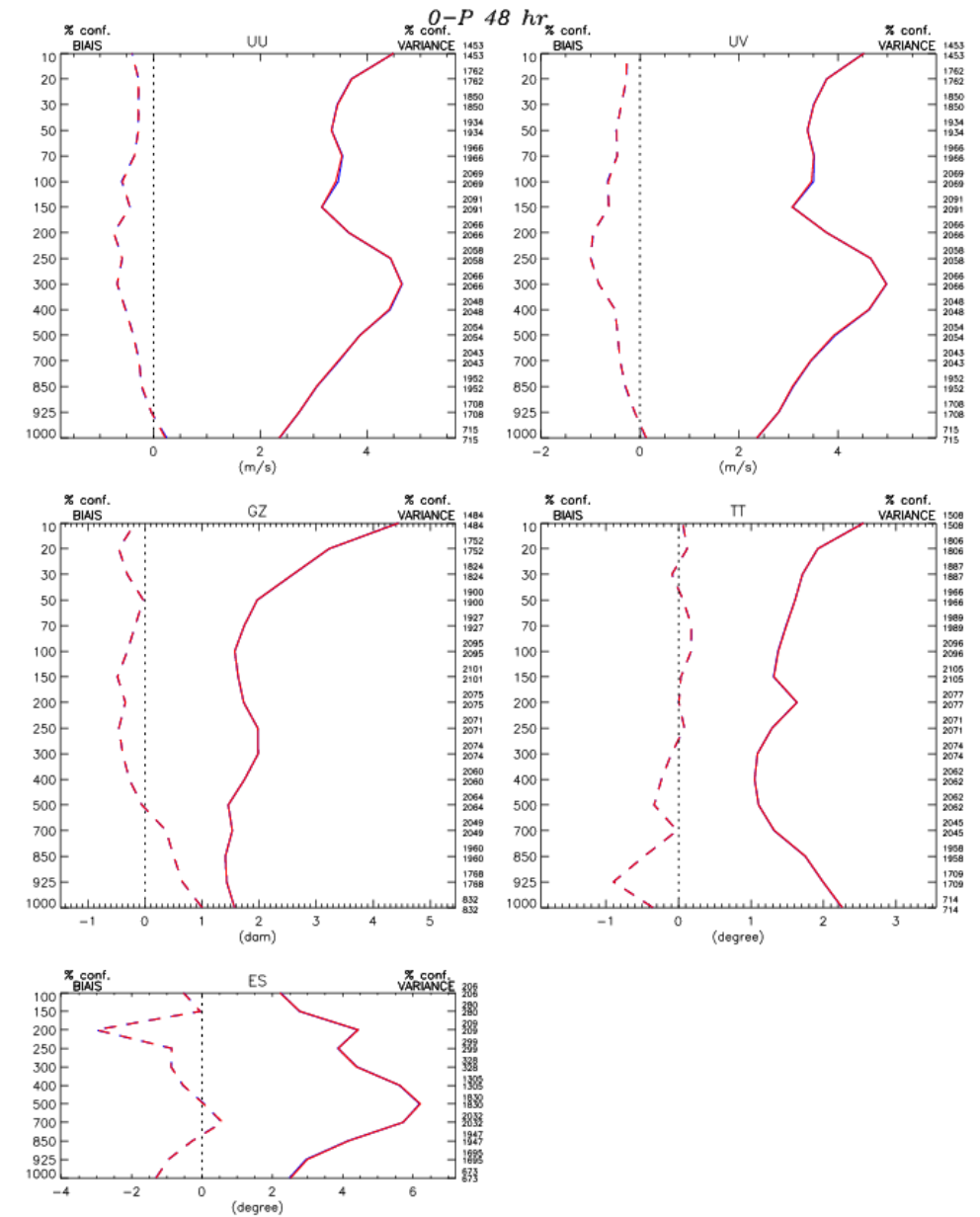
6.8 → bugfix for m6shd (full3mom) NaNs, also added 2 new columns for prognostic aerosols

6.9 → bugfix for collection rates

Note: only winter 2022 (40 cases) is shown because changes were very small.

# Scores v5.3.12 vs. 5.3.13

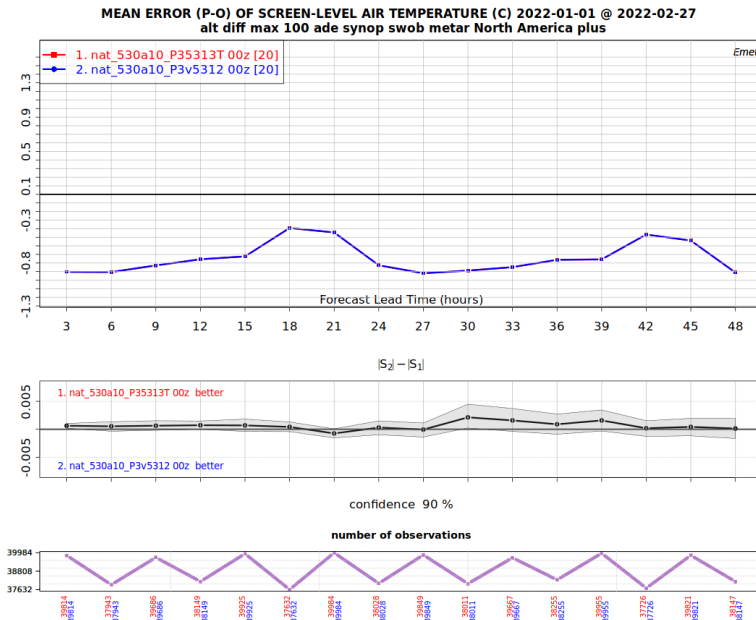
- Arcad → completely neutral



Type : 0-P 48 hr  
 Region : Amerique du Nord plus  
 Lat-lon: ( 25N, 170W ) ( 85N, 40W )  
 Stat. inversees

# Scores v5.3.12 vs. 5.3.13

- Emet TT, TD, UV, P0 neutral



bias		
nat_530a10_P35313T 00z / nat_530a10_P3v5312 00z		
All		
Appalachia CLIM	TD	0.0
	TT	0.0
Arctic All CLIM	TD	0.0
	TT	-0.00052
Arctic Land CLIM	TD	0.0
	TT	-0.00053
Boreal CLIM	TD	-0.00038
	TT	9.8e-05
Canada	TD	6.8e-05
	TT	-0.00015
Central CLIM	TD	6.6e-05
	TT	0.00053
Great Lakes CLIM	TD	0.0
	TT	0.00042
MidAtlantic CLIM	TD	5.5e-06
	TT	-0.00082
Mt West CLIM	TD	0.0
	TT	0.0
North America plus	TD	0.00022
	TT	0.00022
North Atlantic CLIM	TD	0.00013
	TT	0.00027
North Plains CLIM	TD	0.0
	TT	0.00041
Pacific North West CLIM	TD	-0.002
	TT	0.0
Prairie CLIM	TD	0.0011
	TT	0.00056

rmse

rmse		
nat_530a10_P35313T 00z / nat_530a10_P3v5312 00z		
All		
Appalachia CLIM	TD	-0.00052
	TT	0.0
Arctic All CLIM	TD	0.0
	TT	0.0
Arctic Land CLIM	TD	0.00086
	TT	0.00088
Boreal CLIM	TD	0.00011
	TT	-0.0001
Canada	TD	0.00036
	TT	0.0
Central CLIM	TD	0.00025
	TT	0.00025
Great Lakes CLIM	TD	0.00014
	TT	0.00047
MidAtlantic CLIM	TD	0.00027
	TT	0.0
Mt West CLIM	TD	0.0
	TT	0.0
North America plus	TD	0.0
	TT	0.0
North Atlantic CLIM	TD	0.0
	TT	0.0
North Plains CLIM	TD	-0.00012
	TT	-3.4e-05
Pacific North West CLIM	TD	-0.00037
	TT	-0.0009
Prairie CLIM	TD	0.00056
	TT	0.00015

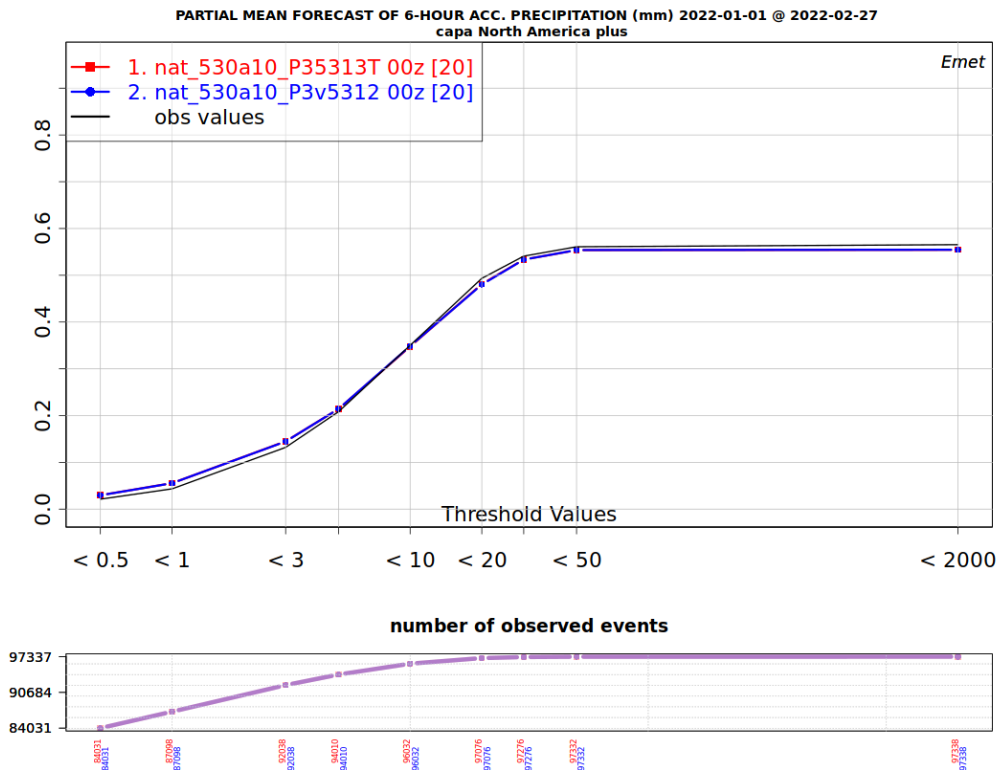
stdev		
nat_530a10_P35313T 00z / nat_530a10_P3v5312 00z		
All		
Appalachia CLIM	TD	-0.00023
	TT	0.00014
Arctic All CLIM	TD	0.00095
	TT	0.0011
Arctic Land CLIM	TD	0.0012
	TT	0.00096
Boreal CLIM	TD	0.00014
	TT	0.00011
Canada	TD	0.00046
	TT	0.0
Central CLIM	TD	0.00018
	TT	0.00021
Great Lakes CLIM	TD	0.00048
	TT	-3.1e-05
MidAtlantic CLIM	TD	0.00025
	TT	0.0
Mt West CLIM	TD	0.0
	TT	0.0
North America plus	TD	6.4e-05
	TT	6.7e-05
North Atlantic CLIM	TD	0.0
	TT	0.0
North Plains CLIM	TD	0.0
	TT	-0.00011
Pacific North West CLIM	TD	-0.0006
	TT	-0.00082
Prairie CLIM	TD	0.00055
	TT	1e-05

bias		
nat_530a10_P3v5313 00z / nat_530a10_P3v5312 00z		
All		
Appalachia CLIM	P0	-0.0026
Arctic All CLIM	P0	-0.00052
Arctic Land CLIM	P0	0.0
Boreal CLIM	P0	-0.0016
Canada	P0	-0.0032
Central CLIM	P0	-0.0026
Central Plains CLIM	P0	0.0
Great Lakes CLIM	P0	-0.00089
MidAtlantic CLIM	P0	-0.0022
Mt West CLIM	P0	-0.004
North America plus	P0	-0.0037
North Atlantic CLIM	P0	-0.0033
North Plains CLIM	P0	-0.0021
Pacific North West CLIM	P0	0.0013
Prairie CLIM	P0	0.0

bias		
nat_530a10_P3v5313 00z / nat_530a10_P3v5312 00z		
All		
Appalachia CLIM	UV	0.0
Arctic All CLIM	UV	-0.0012
Arctic Land CLIM	UV	-0.00076
Boreal CLIM	UV	0.0
Canada	UV	-0.0007
Central CLIM	UV	-0.00035
Central Plains CLIM	UV	-0.0026
Great Lakes CLIM	UV	-2.5e-05
MidAtlantic CLIM	UV	0.0023
Mt West CLIM	UV	0.0026
North America plus	UV	-7e-05
North Atlantic CLIM	UV	0.00089
North Plains CLIM	UV	-9.1e-05
Pacific North West CLIM	UV	0.0
Prairie CLIM	UV	0.00097

# Scores v5.3.12 vs. v5.3.13

- Emet (PR6 and PR24)



ets

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ets nat_530a10_P35313T 00z / nat_530a10_P3v5312 00z		20220101 / 20220228
		All
Appalachia CLIM	PR24	0.00042
	PR6	0.0
Arctic All CLIM	PR24	0.0
	PR6	0.0
Arctic Land CLIM	PR24	0.0
	PR6	0.0
Boreal CLIM	PR24	-0.0051
	PR6	0.011
Canada	PR24	-0.0028
	PR6	0.0
Central CLIM	PR24	-0.0029
	PR6	0.0
Central Plains CLIM	PR24	0.0
	PR6	0.0
Great Lakes CLIM	PR24	-0.0066
	PR6	-0.0027
MidAtlantic CLIM	PR24	0.00042
	PR6	-0.00064
Mt West CLIM	PR24	-0.0035
	PR6	0.0
North America plus	PR24	0.00018
	PR6	0.0
North Atlantic CLIM	PR24	-0.0025
	PR6	0.0042
North Plains CLIM	PR24	0.0
	PR6	0.0
Pacific North West CLIM	PR24	0.0023
	PR6	-0.00064
Prairie CLIM	PR24	-5.2e-05
	PR6	-0.0014

fbi

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fbi nat_530a10_P35313T 00z / nat_530a10_P3v5312 00z		20220101 / 20220228
		All
Appalachia CLIM	PR24	0.0
	PR6	0.0
Arctic All CLIM	PR24	0.0
	PR6	0.018
Arctic Land CLIM	PR24	0.0
	PR6	0.0
Boreal CLIM	PR24	0.0
	PR6	0.026
Canada	PR24	0.0021
	PR6	-0.0012
Central CLIM	PR24	-0.0047
	PR6	0.0
Central Plains CLIM	PR24	0.0
	PR6	0.0
Great Lakes CLIM	PR24	0.0
	PR6	0.018
MidAtlantic CLIM	PR24	-0.0092
	PR6	-0.02
Mt West CLIM	PR24	0.0043
	PR6	0.0
North America plus	PR24	-0.00081
	PR6	-0.00042
North Atlantic CLIM	PR24	0.0
	PR6	-0.0098
North Plains CLIM	PR24	0.0
	PR6	0.0
Pacific North West CLIM	PR24	-0.0017
	PR6	0.0
Prairie CLIM	PR24	0.0036
	PR6	0.0

far

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far nat_530a10_P35313T 00z / nat_530a10_P3v5312 00z		20220101 / 20220228
		All
Appalachia CLIM	PR24	-0.0016
	PR6	0.0
Arctic All CLIM	PR24	0.0
	PR6	0.0
Arctic Land CLIM	PR24	0.0
	PR6	0.0
Boreal CLIM	PR24	-0.0031
	PR6	-6.4e-05
Canada	PR24	0.0
	PR6	0.0
Central CLIM	PR24	-0.014
	PR6	0.0
Central Plains CLIM	PR24	0.0
	PR6	0.0
Great Lakes CLIM	PR24	-0.0084
	PR6	-0.0035
MidAtlantic CLIM	PR24	-0.0035
	PR6	0.0
Mt West CLIM	PR24	0.0021
	PR6	0.0
North America plus	PR24	0.0011
	PR6	0.0
North Atlantic CLIM	PR24	0.0
	PR6	0.0048
North Plains CLIM	PR24	0.0
	PR6	0.0
Pacific North West CLIM	PR24	0.0022
	PR6	0.0
Prairie CLIM	PR24	-0.017
	PR6	0.0

pod

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pod nat_530a10_P35313T 00z / nat_530a10_P3v5312 00z		20220101 / 20220228
		All
Appalachia CLIM	PR24	-0.0029
	PR6	0.0
Arctic All CLIM	PR24	0.0
	PR6	0.0
Arctic Land CLIM	PR24	0.0
	PR6	0.0
Boreal CLIM	PR24	-0.0064
	PR6	0.017
Canada	PR24	-0.0016
	PR6	0.0
Central CLIM	PR24	0.0
	PR6	0.0
Central Plains CLIM	PR24	0.0
	PR6	0.0
Great Lakes CLIM	PR24	0.0
	PR6	-0.0064
MidAtlantic CLIM	PR24	4.6e-05
	PR6	-0.0074
Mt West CLIM	PR24	0.0
	PR6	0.0
North America plus	PR24	0.00057
	PR6	0.0
North Atlantic CLIM	PR24	-0.0018
	PR6	0.0046
North Plains CLIM	PR24	0.0
	PR6	0.0
Pacific North West CLIM	PR24	0.0018
	PR6	0.0
Prairie CLIM	PR24	0.002
	PR6	-0.0017