

Differences for mean sea-level pressure

EMOSLIB does not apply any land sea-mask processing when interpolating the mean sea-level pressure so differences arise only from the different interpolation method and selection of nearest points used by MIR

HRES O1280

Mean sea-level pressure has been interpolated from the O1280 octahedral reduced Gaussian grid to regular lat-lon grids at different target resolutions using EMOSLIB and MIR.

- The differences for more than 99% of grid points are less than 20Pa and in the cases presented here all differences are less than 1 hPa.
- The largest differences occur in regions of high orography with the field gradient changes most rapidly.
- Larger differences are also seen in the lower resolution target grids (0.5°x0.5° and 1.0°x1.0°) at the polar latitudes (90°N and 90°S) which arise from the different handling of the interpolation at the poles.

The plots show the differences with the contours chosen on a logarithmic scale to enhance the smaller differences. Differences smaller than 0.1% of the field range are not shown. Grid points where the absolute difference is greater than 50% of the maximum absolute difference are indicated with red (EMOSLIB greater than MIR) and blue (EMOSLIB less than MIR) filled circles.

Target resolution	Statistics of differences	Histogram of differences	Global	Europe
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0.1x0.1	Maximum difference = 68.125000 Minimum difference = -91.375000 Mean absolute difference = 0.312304 Median absolute difference = 0.125000 Standard deviation = 1.072257 RMS of differences = 1.072257 Percentage of points with absolute difference < 1.0 = 95.306% < 2.0 = 97.828% < 10.0 = 99.743%	-100.0 : -90.0 - 1 (0.000015%) -90.0 : -80.0 - 0 (0.000000%) -80.0 : -70.0 - 1 (0.000015%) -70.0 : -60.0 - 5 (0.000077%) -60.0 : -50.0 - 12 (0.000185%) -50.0 : -40.0 - 36 (0.000555%) -40.0 : -30.0 - 153 (0.002360%) -30.0 : -20.0 - 638 (0.009840%) -20.0 : -10.0 - 7583 (0.116957%) -10.0 : 0.0 - 3294855 (50.818295%) 0.0 : 10.0 - 3172050 (48.924209%) 10.0 : 20.0 - 7478 (0.115337%) 20.0 : 30.0 - 603 (0.009300%) 30.0 : 40.0 - 121 (0.001866%) 40.0 : 50.0 - 49 (0.000756%) 50.0 : 60.0 - 13 (0.000201%) 60.0 : 70.0 - 2 (0.000031%) 70.0 : 80.0 - 0 (0.000000%) 80.0 : 90.0 - 0 (0.000000%) 90.0 : 100.0 - 0 (0.000000%)		
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0.125x0.125	Maximum difference = 92.937500 Minimum difference = -80.062500 Mean absolute difference = 0.297040 Median absolute difference = 0.062500 Standard deviation = 1.112258 RMS of differences = 1.112258 Percentage of points with absolute difference < 1.0 = 95.244% < 2.0 = 97.784% < 10.0 = 99.717%	-100.0 : -90.0 - 0 (0.000000%) -90.0 : -80.0 - 1 (0.000024%) -80.0 : -70.0 - 3 (0.000072%) -70.0 : -60.0 - 10 (0.000241%) -60.0 : -50.0 - 7 (0.000169%) -50.0 : -40.0 - 26 (0.000626%) -40.0 : -30.0 - 84 (0.002024%) -30.0 : -20.0 - 387 (0.009325%) -20.0 : -10.0 - 5446 (0.131226%) -10.0 : 0.0 - 2862191 (68.967128%) 0.0 : 10.0 - 1276136 (30.749672%) 10.0 : 20.0 - 5303 (0.127781%) 20.0 : 30.0 - 362 (0.008723%) 30.0 : 40.0 - 81 (0.001952%) 40.0 : 50.0 - 28 (0.000675%) 50.0 : 60.0 - 9 (0.000217%) 60.0 : 70.0 - 2 (0.000048%) 70.0 : 80.0 - 3 (0.000072%) 80.0 : 90.0 - 0 (0.000000%) 90.0 : 100.0 - 1 (0.000024%)		
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0.25x0.25	Maximum difference = 92.875000 Minimum difference = -61.875000 Mean absolute difference = 0.338583 Median absolute difference = 0.125000 Standard deviation = 1.266861 RMS of differences = 1.266861 Percentage of points with absolute difference < 1.0 = 95.149% < 2.0 = 97.663% < 10.0 = 99.580%	-100.0 : -90.0 - 0 (0.000000%) -90.0 : -80.0 - 0 (0.000000%) -80.0 : -70.0 - 0 (0.000000%) -70.0 : -60.0 - 4 (0.000385%) -60.0 : -50.0 - 4 (0.000385%) -50.0 : -40.0 - 6 (0.000578%) -40.0 : -30.0 - 15 (0.001445%) -30.0 : -20.0 - 101 (0.009728%) -20.0 : -10.0 - 2043 (0.196775%) -10.0 : 0.0 - 527362 (50.793843%) 0.0 : 10.0 - 506516 (48.786022%) 10.0 : 20.0 - 2066 (0.198991%) 20.0 : 30.0 - 93 (0.008957%) 30.0 : 40.0 - 19 (0.001830%) 40.0 : 50.0 - 6 (0.000578%) 50.0 : 60.0 - 2 (0.000193%) 60.0 : 70.0 - 1 (0.000096%) 70.0 : 80.0 - 1 (0.000096%) 80.0 : 90.0 - 0 (0.000000%) 90.0 : 100.0 - 1 (0.000096%)		
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0.5x0.5	Maximum difference = 51.000000 Minimum difference = -61.000000 Mean absolute difference = 0.309541 Median absolute difference = 0.000000 Standard deviation = 1.523147 RMS of differences = 1.523153 Percentage of points with absolute difference < 1.0 = 94.304% < 2.0 = 97.268% < 10.0 = 99.306%	-70.0 : -60.0 - 2 (0.000769%) -60.0 : -50.0 - 1 (0.000385%) -50.0 : -40.0 - 1 (0.000385%) -40.0 : -30.0 - 3 (0.001154%) -30.0 : -20.0 - 21 (0.008079%) -20.0 : -10.0 - 855 (0.328947%) -10.0 : 0.0 - 41886 (16.114958%) 0.0 : 10.0 - 216238 (83.194060%) 10.0 : 20.0 - 871 (0.335103%) 20.0 : 30.0 - 33 (0.012696%) 30.0 : 40.0 - 6 (0.002308%) 40.0 : 50.0 - 2 (0.000769%) 50.0 : 60.0 - 1 (0.000385%) 60.0 : 70.0 - 0 (0.000000%)		
1.0x1.0	Maximum difference = 50.937500 Minimum difference = -60.812500 Mean absolute difference = 0.437874 Median absolute difference = 0.062500 Standard deviation = 1.932739 RMS of differences = 1.932777 Percentage of points with absolute difference < 1.0 = 94.672% < 2.0 = 96.980% < 10.0 = 98.766%	-70.0 : -60.0 - 1 (0.001535%) -60.0 : -50.0 - 0 (0.000000%) -50.0 : -40.0 - 0 (0.000000%) -40.0 : -30.0 - 0 (0.000000%) -30.0 : -20.0 - 2 (0.003069%) -20.0 : -10.0 - 389 (0.596992%) -10.0 : 0.0 - 44619 (68.476059%) 0.0 : 10.0 - 19737 (30.290055%) 10.0 : 20.0 - 401 (0.615408%) 20.0 : 30.0 - 9 (0.013812%) 30.0 : 40.0 - 1 (0.001535%) 40.0 : 50.0 - 0 (0.000000%) 50.0 : 60.0 - 1 (0.001535%) 60.0 : 70.0 - 0 (0.000000%)		