Geoscientific
Model Development

Supplement of

Introducing LAB60: A $1/60°$ NEMO 3.6 numerical simulation of the Labrador Sea

Clark Pennelly and Paul G. Myers

Correspondence to: Clark Pennelly (pennelly@ualberta.ca)

Labrador Sea Mixed Layer Depth
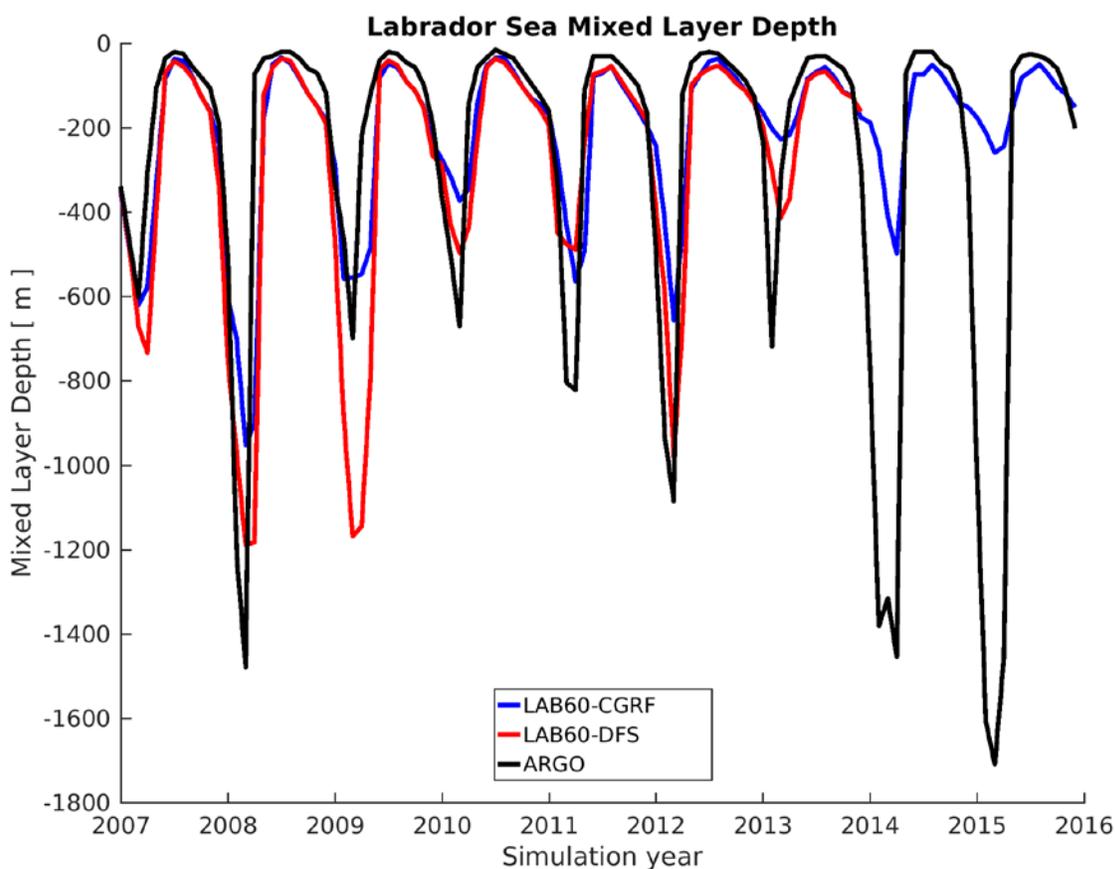
1

2   Supplemental Figure 1: Monthly mixed layer depth as determined by the LAB60-CGRF

3   simulation, the LAB60-DFS simulation, and ARGO observations from 2007 to the end of 2016

4   (2014 for LAB60-DFS). This figure highlights the justification that CGRF was inadequate to

5   continue forcing LAB60, prompting us to restart the run in 2007 using the DFS forcing.

6

7   Supplemental Video 1: Normalized relative vorticity of the LAB60 simulation, from 1 Jan 2004

8   through 31 Dec 2013. Note: a few days are missing due to corrupted output files. DOI:

9   https://doi.org/10.7939/r3-2yts-nw62

10

11   Supplemental Video 2: Convective energy of the LAB60 simulation, with a reference depth of

12   2000m. Video takes place from 1 Jan 2004 through 31 Dec 2013. Units are in J m^{-3}. Note: a few

13   days are missing due to corrupted output files. DOI: https://doi.org/10.7939/r3-nen0-g831

14

15   Supplemental Video 3: Mixed layer depth (MLD), in meters, of the LAB60 simulation from 1 Jan

16   2004 through 31 Dec 2013. A red contour line shows where the ice concentration is 10%. A

17   black contour line shows where the MLD exceeds 1000m. Note: a few days are missing due to

18   corrupted output files. DOI: https://doi.org/10.7939/r3-m6rk-h867

19

20   Supplemental Video 4: Greenland melt passive tracer, in meters, of the LAB60 simulation. Video

21   takes place from 1 Jan 2004 though 31 Dec 2013. Note: a few days are missing due to corrupted

22   output files. DOI: https://doi.org/10.7939/r3-43mg-db88

23

24   Supplemental Video 5: Irminger water passive tracer, in meters, of the LAB60 simulation. Video

25   takes place from 1 Jan 2004 through 31 Dec 2013. Note: a few days are missing due to

26   corrupted output files. DOI: https://doi.org/10.7939/r3-zwkr-0w35

27

28   Supplemental Video 6: Labrador Sea water tracer, in meters, of the LAB60 simulation. Video

29   takes place from 1 Jan 2004 through 31 Dec 2013. Note: a few days are missing due to

30   corrupted output files. DOI: https://doi.org/10.7939/r3-7295-ks15