

*[Geophysical Research Letters]*

Supporting Information for

**[Mechanisms driving the dispersal of hydrothermal iron from the northern Mid Atlantic Ridge]**

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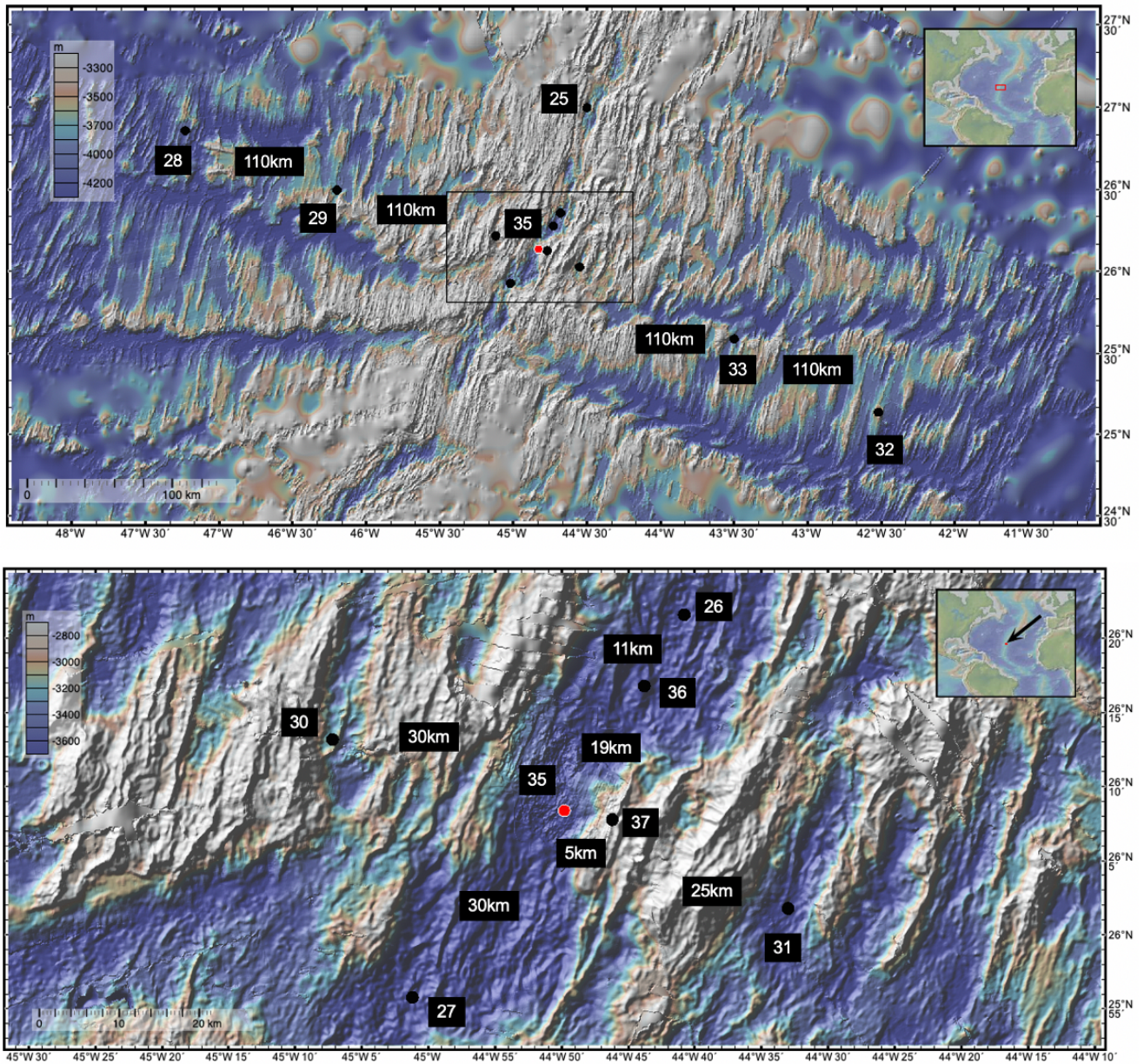
Figures S1 to S5

**Additional Supporting Information (Files uploaded separately)**

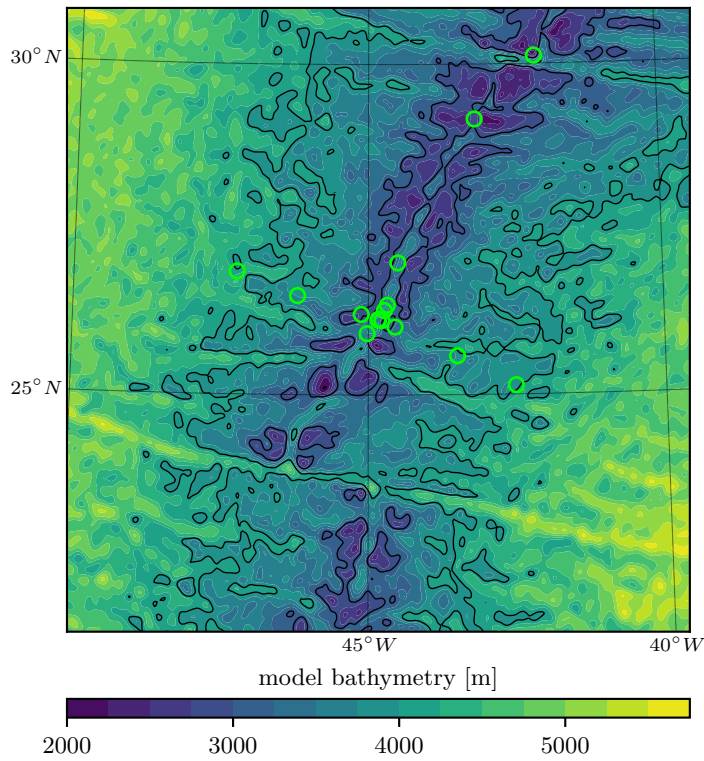
None

**Introduction**

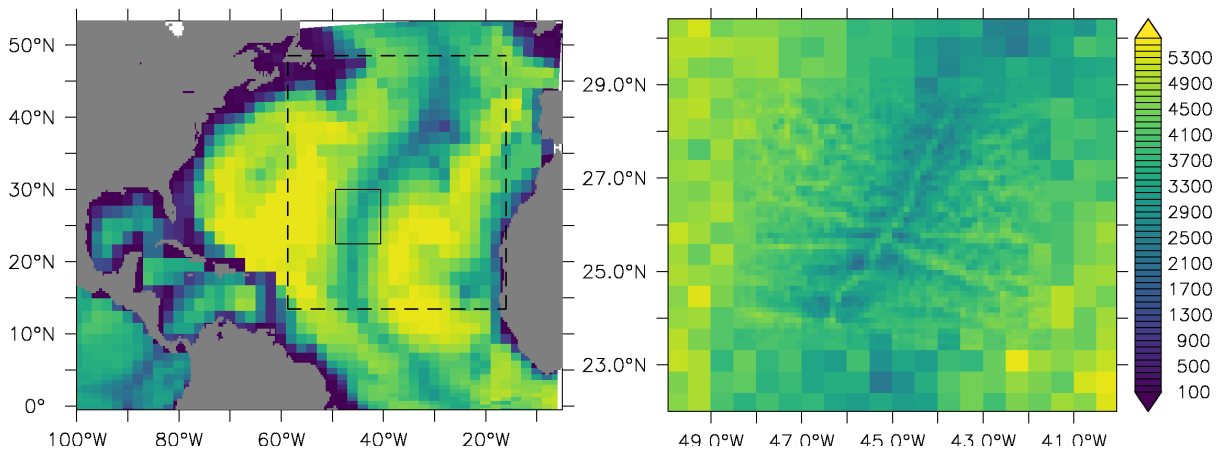
- Supplementary Figures for the associated submission



Supp Fig 1. JC156 Cruise stations. Red circle marks TAG at station 35 and labels represent the spacing between stations. The closest station spacing is between 5-30km close to TAG and extends to 110km further off axis. Upper panel shows the full domain around the TAG site and the lower panel zooms in on stations immediately adjacent to TAG enclosed by the black square.

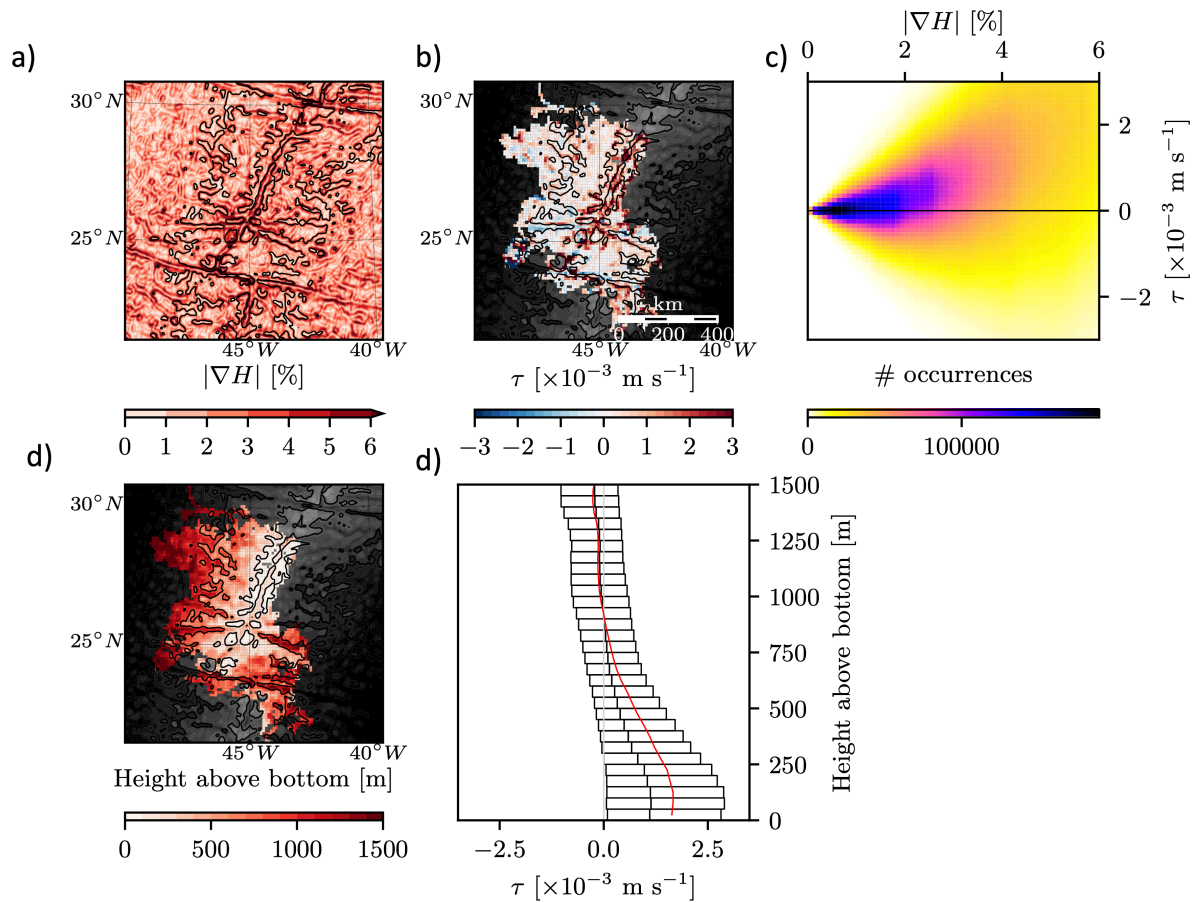


Supp Fig 2. Bathymetry in the GIGATL3 model with the GA13 sampling locations as green circles.



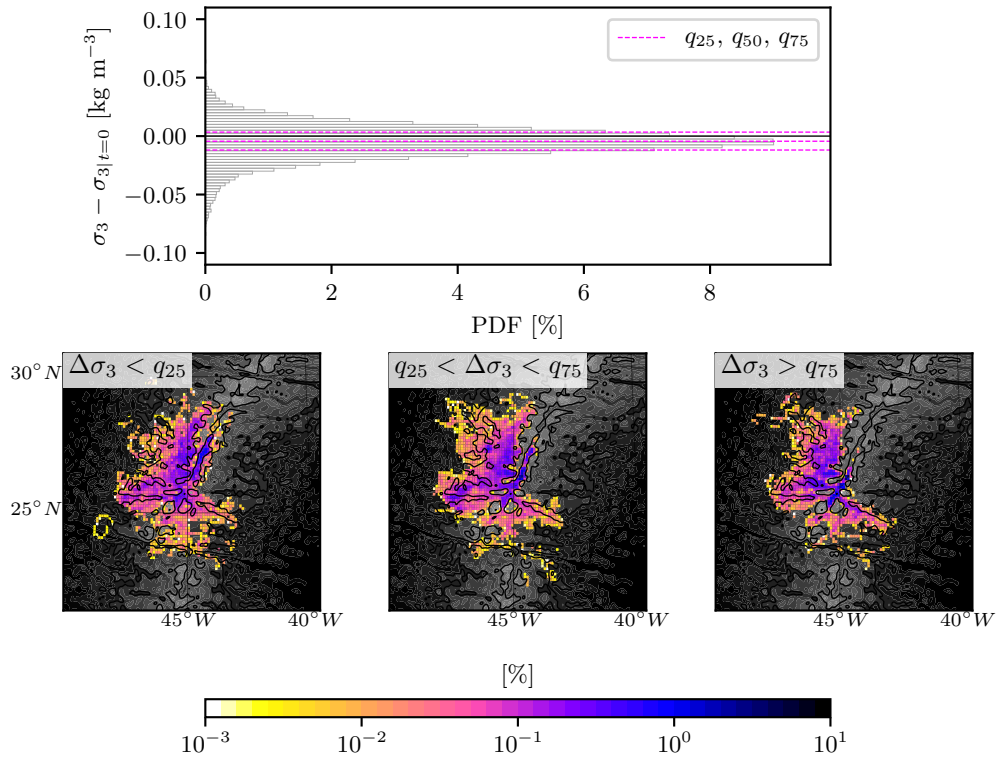
Supp Fig 3. Bathymetry in the ORCA2 and the AGRIF nested model configuration. The AGRIF nesting is at 0.5x0.5 degrees (dashed box) and at 1/8 x 1/8 degrees (black box)





Supp Fig 4. Diagnostics related to topostrophy. (a) slope of bathymetry ( $\text{grad}(H)$ ) (b) topostrophy ( $t$ ) computed along particle trajectories and bin-averaged (c) Histogram of  $t$  vs  $\text{grad}(H)$  (d) Bin-averaged height above bottom of particles and (e) quartiles and mean of in height-above-bottom coordinates.





Supp Fig 5. (Top) histogram of density change and (bottom) histogram of position discriminated on density change for all particles. Lower panels show maps of the different distributions according to the density change quartile: (Left, lower quartile) the 25% of particles that have lightened the most, (middle, middle quartile) 50% of the particles that have shown the least change in density (i.e. in the middle of the histogram) and (right, upper quartile) the 25% of the particles that have become most dense.