CORRIGENDUM

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After publication of [McMonigal et al. \(2020\)](#), an error in the rotation of the ADCP data at moorings C and D was identified. This coding error resulted in incorrect values for the reported time-mean volume and temperature transports. Importantly, the error had negligible impact on the variability of the velocity, volume transport, and temperature transport and thus does not affect the main conclusions of the paper. The majority of changes to the text are changes on the order of 0.01–0.1 to Pearson correlation coefficients.

[Table C1](#), new to this corrigendum, shows all of the corrected values from the text. The corrected versions of [Table 2](#) and [Figs. 5–12](#) from [McMonigal et al. \(2020\)](#) are also provided here. The incorrect animation from the online supplemental material has been replaced with a corrected version and is available through the supplemental material link associated with the original paper (see the footnote and the reference for the applicable DOIs). The authors regret any inconvenience this error may have caused.

REFERENCES

- Beal, L. M., and H. L. Bryden, 1999: The velocity and vorticity structure of the Agulhas Current at 32°S. *J. Geophys. Res.*, **104**, 5151–5176, <https://doi.org/10.1029/1998JC900056>.
- McMonigal, K., L. M. Beal, S. Elipot, K. L. Gunn, J. Hermes, T. Morris, and A. Houk, 2020: The impact of meanders, deepening and broadening, and seasonality on Agulhas Current temperature variability. *J. Phys. Oceanogr.*, **50**, 3529–3544, <https://doi.org/10.1175/JPO-D-20-0018.1>.
- Richardson, P. L., 2007: Agulhas leakage into the Atlantic estimated with subsurface floats and surface drifters. *Deep-Sea Res. I*, **54**, 1361–1389, <https://doi.org/10.1016/j.dsr.2007.04.010>.

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The corrected supplemental information associated with this corrigendum is available at the Journals Online website: <https://doi.org/10.1175/JPO-D-20-0018.s1>.

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TABLE C1. Corrected inline text values.

Section	Computation	Original value	Corrected value
Abstract	Mean temperature transport	3.8 PW	4.4 PW
Abstract	Mean volume transport	−76 Sv	−87 Sv
Abstract	Mean transport-weighted temperature	12.3°C	12.7°C
Abstract	Temperature transport std dev	0.9 PW	1.1 PW
Abstract	Percent error in inferring temperature transport	24%	28%
4b	Correlation between jet volume and temperature transport	0.95	0.94
4b	Mean box volume transport	−75 Sv	−88 Sv
4b	Mean jet volume transport	−76 Sv	−87 Sv
4b	Mean box temperature transport	−3.8 PW	−4.5 PW
4b	Mean jet temperature transport	−3.8 PW	−4.4 PW
4b	Range of jet values	From 0 to −136 Sv/ from 0 to −6.3 PW	From −5 to −154 PW/ from −0.5 to −7.5 PW
4c	Mean jet transport-weighted temperature	12.3°C	12.7°C
4c	Mean box transport-weighted temperature	12.7°C	13.1°C
4c	Transport-weighted temperature difference from Beal and Bryden (1999)	1.1°C	0.7°C
4c	Range of transport-weighted temperatures	9.5°–19.9°C	9.8°–24.9°C
4c	Amount by which meandering cools the current	0.9°C	1.3°C
4c	RMS error on linear fit (box)	0.24 PW	0.28 PW
4c	RMS error on linear fit (jet)	0.27 PW	0.31 PW
4d	PC1 correlation with temperature transport (box)	−0.20	−0.38
4d	PC1 correlation with temperature transport (jet)	−0.43	−0.55
4d	PC2 correlation with temperature transport (box)	−0.72	−0.70
4d	PC2 correlation with temperature transport (jet)	−0.51	−0.54
4d	PC2 correlation with volume transport (box)	−0.68	−0.67
4d	PC2 correlation with volume transport (jet)	−0.51	−0.54
4d	PC3 correlation with temperature transport (box)	0.35	0.32
4d	PC3 correlation with temperature transport (jet)	0.05	0.09
4e	Correlation between upper and lower layer velocity anomalies	0.36	0.30
4e	Correlation between barotropic and upper layer	0.78	0.83
4e	Correlation between barotropic and lower layer	0.22	0.20
4e	Correlation between volume transport above 1000 m and square of the difference of depth of 10°C isotherm	0.84	0.86
4e	Percent variance in temperature transport explained by 1.5-layer model	78%	89%
4f	Agulhas leakage volume transport	21 Sv	24 Sv
4f	Increase in leakage estimate since Richardson (2007)	6 Sv	9 Sv
5	Mean temperature transport	−3.8 PW	−4.4 PW

TABLE 2. Statistics of the volume and temperature transport of the Agulhas Current.

	Jet volume transport (Sv)	Box volume transport (Sv)	Jet temperature transport (PW)	Box temperature transport (PW)	Jet transport-weighted temperature (°C)	Box transport-weighted temperature (°C)
Mean	−87	−86	−4.4	−4.5	12.7	13.1
Std dev	22	26	0.9	0.9	1.1	1.8
Min (poleward)	−5	14	−0.5	−0.7	9.3	9.8
Max (poleward)	−154	−184	−7.5	−8.1	16.2	24.9
Median	−85	−84	−4.4	−4.4	12.7	12.8
Meander mean	−80	−86	−3.7	−4.1	11.5	11.8
Nonmeander mean	−88	−86	−4.5	−4.5	12.8	13.2

FIG. 5. Mean temperature ($^{\circ}\text{C}$) and velocity (m s^{-1}) structure of the Agulhas Current during (a) nonmeandering times and (b) meandering times. Colors and thin contours show temperature, with each contour corresponding to 1°C . Thick contours show cross-track velocity, with each contour corresponding to 0.25 m s^{-1} . (c) Meander time series, as measured by sea level anomaly at 33.6°S , 28°E . Meanders are defined as times during which the SLA is lower than -0.2 m (gray shading).

FIG. 6. (a) Time series of the volume transport of the Agulhas Current. The boundary layer (“box”) transport is in black, and the streamwise (“jet”) transport is in red. Sizes of errors on each 20-h estimate are shown near the left axis. (b) Time series of the temperature transport. (c) Time series of the transport-weighted temperature, only shown when volume transport is larger than 25 Sv southward. Gray shadings in (a)–(c) show periods during which the current is meandering.

FIG. 7. (a) Composite temperature (colors) and velocity (thick contours) of the strongest 10% of southward box temperature transport times, excluding meander times. (b) Composite of the weakest 10% of southward box temperature transport times, excluding meander times. (c) The difference between the composites of strong minus weak temperature transport. (d) Time series of the box volume transport above 1000 m [Sv; blue (left axis)] and the square of the difference of depth between the 10°C isotherm at 20 km and at 219 km offshore [m^2 ; red (right axis)].

FIG. 8. Scatterplots of the (a) box and (b) jet temperature vs volume transport. Colors show the day of year of each data point. The black line shows a linear fit of the two variables.

FIG. 9. Scatterplots of the (a) box and (b) jet volume transport vs transport-weighted temperature. Colors show the day of year of each data point.

FIG. 10. The first three EOFs of the temperature field, labeled with the fraction of the total variance that each mode explains (fractional covariance; “fc”). The corresponding principal component time series are shown in Fig. 11, below. (a) The first EOF of the temperature field, describing 40% of the variance. (b) The second EOF of the temperature field, describing 25% of the variance. (c) The third EOF of the temperature field, describing 15% of the variance. (d) The pointwise correlation coefficient between principal component 2 and the cross-track velocity. Negative means that the pattern shown in EOF 2 is associated with negative anomalies of velocity (increased southward velocity). Correlations of less than 0.23 are not shown because they are not significant at the 95% confidence level according to the Pearson correlation using a decorrelation time scale of 10 days.

FIG. 11. The principal component time series of the first three EOFs, (a) principal component 1 (black; left axis) and the sea level anomaly near mooring C used to determine meander times (red; right axis), (b) principal component 2 (black; left axis) and the box temperature transport (red; right axis), and (c) principal component 3 (black) shown with 90-day smoothing (red) to highlight seasonal variability. Gray shadings in (a)–(c) show periods during which the current is meandering.

FIG. 12. (a) Scatterplot of the spatial mean 0–1000-m velocity anomaly vs the spatial mean below-1000-m velocity anomaly. Nonmeander times are shown in black; meanders are shown in red. The black line shows a linear regression between the upper- and lower-layer velocity anomalies. (b) Scatterplot of the barotropic velocity against the upper-layer (red) and lower-layer (blue) velocity anomalies. The black line is a reference line with slope of 1.