Errata – 05 March 2020


1. Fig. 4 caption, p. 2475: Replace “from (17)” with “from (19)” in (b).

2. Eq. (26), p. 2485:

\[ \omega = c_s k_x / (\lambda^2 k_x^2 + 1) \]  

[for cyclic wavenumbers and frequencies \( k_x \) and \( \omega \)]

3. Eq. (27), p. 2485:

\[ \mathcal{L}^{-1} = [\omega_2 (\lambda^2 k_x^2 + 1) - c_s k_x] \]  

4. Figs. 2, 17-24, and A1: The color shading in all wavenumber-frequency spectral figure panels shows \( \log_{10} \) of the respective spectral quantities. The dimensionless \((k, l, \omega)\) wavenumber-wavenumber-frequency spectra, from which the zonal wavenumber-frequency spectra shown in the figures were computed by integration over meridional wavenumber \( l \), were scaled by the dimensionless factor \( \Delta x \Delta y \Delta t / (2\pi)^3 \), where \( \Delta x = L_x / 256 = \Delta y = L_y / 128 \) are the grid increments for the \( 256 \times 128 \) grid on the dimensionless domain \( L_x \times L_y = 12\pi \times 6\pi \), and \( \Delta t = 0.5 \) is the time increment for the frequency spectra. For Fig. 21, the units should be \( \log_{10} \) of \( \text{cm}^2 \text{cpd} \text{cpkm}^{-1} \).

5. Fig. 16: Replace Fig. 16 with the corrected figure (Fig. 1) showing radial wavenumber power spectra \( E(K) \), defined so that the integral over radial wavenumber \( K \) gives the signal variance: \( \sigma_X^2 = \int_0^{2\pi} \int_{K_0}^{K_1} E_X(K) dK d\theta \), where \( \sigma_X \) and \( E_X(K) \) are the spatial standard deviation and radial wavenumber power spectrum for variable \( X \), and \( E_X(K) \) is defined for \( K_0 \leq K \leq K_1 \), with \( E_K = 0 \) for \( \{|k|, |l|\} < K_0 \). The model \( E(K) \) spectra were computed by bin-averaging the frequency-integrated two-dimensional wavenumber spectra over the \( (k, l) = K(\cos \theta, \sin \theta) \) wavenumber plane with respect to \( K \) and then multiplying the result by \( K \).

6. Appendix, a. Scaling: Replace \( \tau \) with \( \tau' \) in Eq. (A1) and the associated definition of \( \mathcal{F} \).

References


Figure 1: Corrected replacement for Fig. 16 in Samelson et al. (2019). One-dimensional, radial wavenumber power spectra of model and corrected mean AVISO SSH (solid) and scaled model forcing $\mathcal{F}_{SSH} \tau_*$ (dashed green). Model $\eta_s$ spectra are shown from simulations with $\beta = 0.62, r_\psi = 0.022, \tau = 0.093$ (red); $\beta = 0.62, r_\psi = 0.022, \tau = 0.92$ (thick green); and $\beta = 0.61, r_\psi = 0.0054, \tau = 9.3$ (blue), and for the space-time smoothed solution with $\beta = 0.62, r_\psi = 0.022, \tau = 0.92$ (thin green). The forcing spectrum is shown after multiplication of the forcing by the timescale $\tau_*$ for the case $\tau = 0.92$, so that the integral of the resulting scaled forcing spectrum gives the effective dimensional variance increment $\sigma_W^2 \tau_* \approx 2.8 \text{ cm}^2$ for $\tau_* \approx 9.5$ d. The corrected mean AVISO spectrum (solid black) was computed from the analytical model spectrum that was fitted to the mean of the spectra in Fig. 20 of Samelson et al. (2019), after integration over frequency, as described in the 29 October 2019 errata for Samelson et al. (2016), and has integrated standard deviation $\sigma_{SSH} \approx 6.4 \text{ cm}$. The deformation-radius wavenumber $1/(2\pi L_R) \approx 1/250 \text{ cpkm}$ and a $K^{-5}$ power-law slope are also shown (dotted black).