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Correction to "Aliased tidal errors in TOPEX/POSEIDON sea surface height data" by M. G. Schlax and D. B. Chelton

In the paper "Aliased tidal errors in TOPEX/POSEIDON sea surface height data" by M. G. Schlax and D. B. Chelton (*Journal of Geophysical Research, 99*(C12), 24,761–24,775, 1994), Tables 1, 2, and 3 all contain errors in the alias wavelengths of the tidal harmonics. The corrected tables appear below. The changes have little or no effect on the primary alias wavelengths λ_0 that are of most interest in applications. The major error was the interchange of the secondary alias values for λ_{-1} and λ_1 in the tables for TOPEX (Table 1) and ERS 1 (Table 3). Minor changes have been made to the primary aliases for TOPEX. Note further that the repeat period of Geosat used to calculate the entries in Table 2 is 17.0505 days, rather than 17.05 days as was stated in the paper (p. 24,765).

We also wish to offer a more intuitive rationale for equation (3a),

$$\delta\psi_x = \delta\phi_x - \frac{2\pi}{T_a}\,\delta t. \tag{3a}$$

As was stated in the text, $\delta\phi_x$ is the phase change that occurs over the time interval δt between the nearest-time points on two adjacent ascending tracks. This is the phase change that has traditionally been used in the calculation of alias wavelengths. During the time interval δt the phase of the aliased signal at the earlier track has also advanced by the amount $2\pi T_a^{-1}\delta t$. The synchronous phase difference between the aliased signals at the adjacent nodes is therefore given by the difference (3a).

Table 1. Tidal Periods, TOPEX Alias Periods, and the Three Longest Alias Wavelengths for the Six Major Tidal Constituents

Tide	Period, hours	T_a, days	λ_{-1}, deg	λ_0, deg	λ_1, deg
M_2	12.420601	62.11	2.16 E	9.01 E	4.14 W
S_2	12.	58.74	2.79 W	183.01 W	2.88 E
N_2	12.658348	49.53	2.16 W	9.01 W	4.14 E
K_1	23.93447	173.19	2.81 W	366.03 W	2.86 E
O_1	25.819342	45.71	2.17 E	9.24 E	4.09 W
P_1	24.06589	88.89	2.81 W	366.03 W	2.86 E

The direction of propagation for each alias is denoted as E for east and W for west.

Table 2. Geosat Alias Periods and Three Longest Alias Wavelengths for the Six Major Tidal Constituents

Tide	T_a, days	λ_{-1}, deg	λ_0, deg	λ_1, deg
M_2	317.13	1.25 W	8.00 W	1.81 E
S_2	168.81	1.46 E	179.89 E	1.49 W
N_2	52.07	1.08 E	4.09 E	2.31 W
K_1	175.45	1.47 E	359.79 E	1.48 W
O_1	112.95	1.25 W	8.18 W	1.80 E
P_1	4465.22	1.47 E	359.78 E	1.48 W

The direction of propagation for each alias is denoted as E for east and W for west.

Table 3. ERS 1 Alias Periods and Three Longest Alias Wavelengths for the Six Major Tidal Constituents

Tide	T_a, days	λ_{-1}, deg	λ_0, deg	λ_1, deg
M_2	94.49	0.78 W	8.79 E	0.67 E
S_2	∞	0.72	179.76	0.72
N_2	97.39	0.86 E	4.29 W	0.62 W
K_1	365.25	0.72 E	359.70 E	0.72 W
O_1	75.07	0.79 W	8.58 E	0.66 E
P_1	365.25	0.72 W	359.52 W	0.72 E

The direction of propagation for each alias is denoted as E for east and W for west.

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