

CORRIGENDUM

Nonlinear model predictions of bispectra of shoaling surface gravity waves

By STEVE ELGAR AND R. T. GUZA

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Owing to a typographical error in a computer code for the flat-bottom simulations (§3.2), figures 10–12 are incorrect. The corrected figures 10 and 11 shown here indicate slightly improved agreement between the flat-bottom model and field observations (compare figure 10 with figure 1*a*, and compare figure 11 with figure 2). The corrected figure 12 (not shown) is not significantly different from the original version. The skewness evolution in constant depth is substantially altered in corrected results. The corrected evolution (figure 16 here – there is no comparable figure in the original paper) is quite similar to model results on a sloping bottom (figure 13, bottom panel).

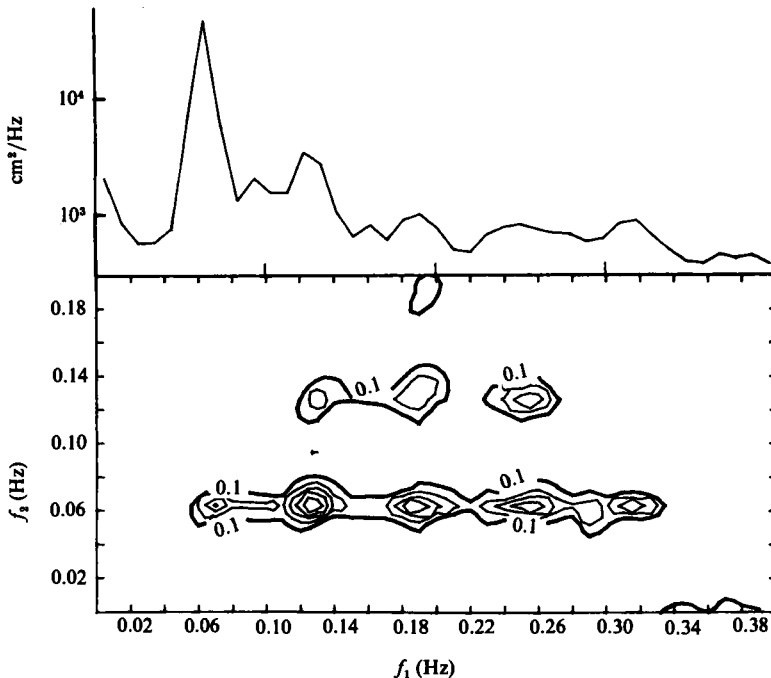


FIGURE 10. Power spectrum (above) and contours of bispectrum (below) predicted by the flat-bottom spectral nonlinear model at $x = 61$ m, with initial conditions S3. Format is the same as figure 1.

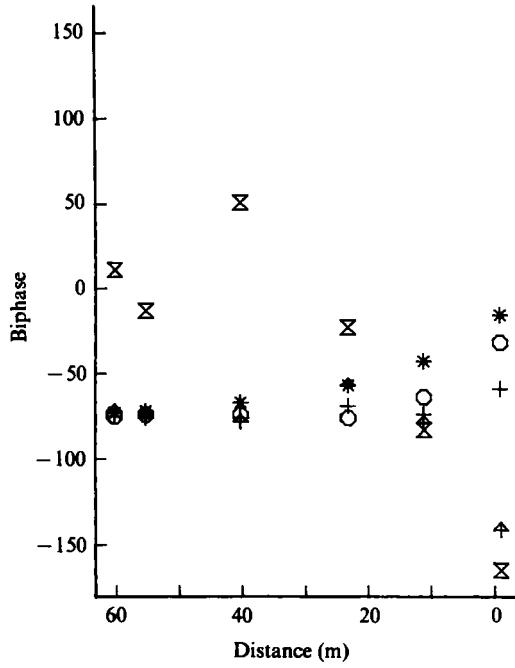


FIGURE 11. Biphase *versus* distance for selected frequency pairs as predicted by the flat-bottom spectral nonlinear model (S3). Symbols are defined in figure 2.

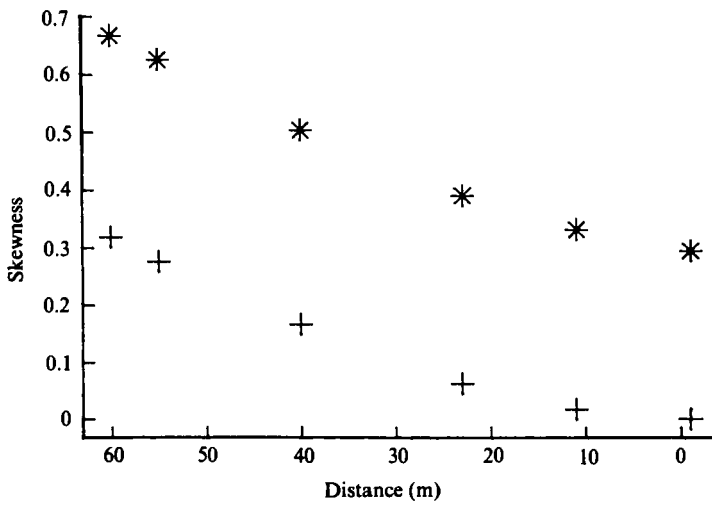


FIGURE 16. Skewness *versus* distance for the model sets S3 (*) and S5 (+). The data have been band-pass filtered between $f = 0.04$ and 0.4 Hz.

Equations (4.3) and (4.6) should read

$$A_n(x) = \frac{3i}{2h} \left\{ \sum_{p=1}^{(n-1)} \frac{1}{2} k_p A_{n-p} A_p \exp[-i(k_{n-p} + k_p - k_n)x] \right. \\ \left. - \sum_{p=1}^{N-n} k_p A_{n+p} A_p^* \exp[-i(k_{n+p} - k_p - k_n)x] \right. \\ \left. + \sum_{p=n+1}^N k_p A_p A_{p-n}^* \exp[-i(k_p - k_{p-n} - k_n)x] \right\}, \quad (4.3)$$

$$B(\omega_1, \omega_2) = \frac{Q}{K} |A_1|^4 [1 - e^{iKx}] + B_0 e^{iKx}. \quad (4.6)$$

The corrected figure 14 (not shown) is slightly modified; biphases converge to about -80° (as opposed to about -90° in the original). The skewness evolution in figure 15 is incorrect. The corrected skewness increases smoothly from 0.2 at $x = 0$ to 0.3 at $x = 61$ m.

We originally concluded that, with the important exception of skewness, the gross statistical features of nonlinear evolution occurring on a sloping beach are reproduced in numerical simulations in constant depth. The corrected calculations essentially remove the skewness exception.

A remark by A. J. Bowen led to the identification of numerical errors in the original calculations. Numerical work was performed on the CRAY XMP at the San Diego Supercomputer Center (supported by the National Science Foundation) through an allocation provided by the Center.