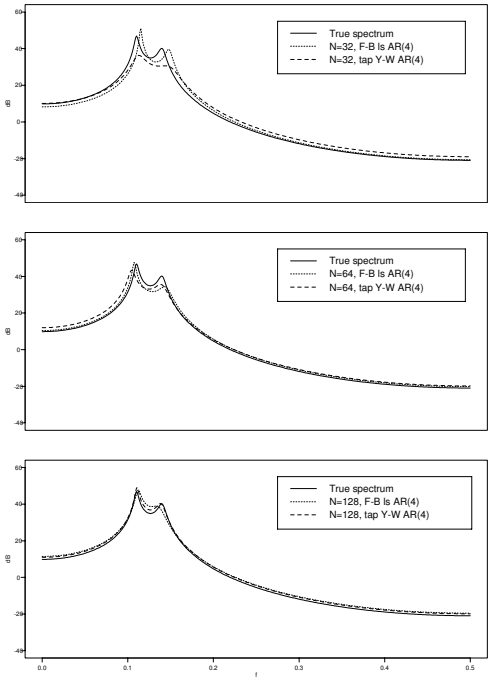

Figure 36: Comparison of F-B least squares and tapered Yule-Walker spectral estimates for the AR(4) process.

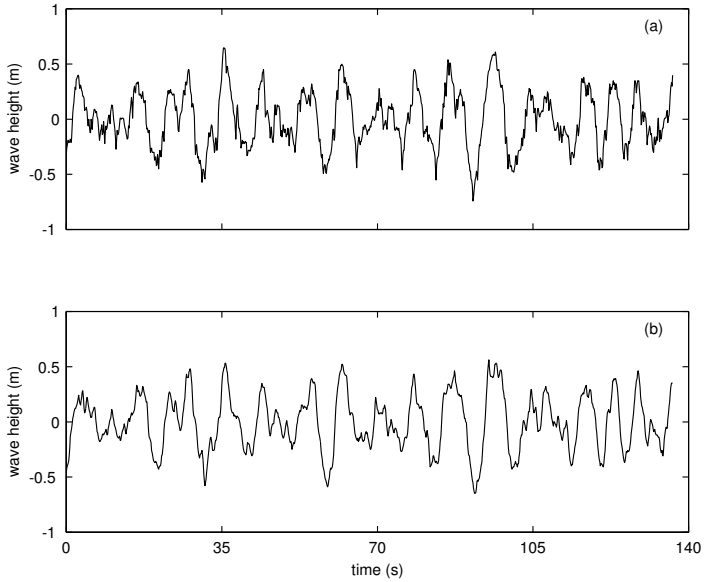

Figure 37: Simultaneous measurements of ocean waves versus time by two instruments of quite different design, (a) an infrared wave gauge, and (b) a wire wave gauge. There are $N = 1024$ data values in each series and the sample interval is $\delta_t = 4/30$s. (These series were derived from data supplied courtesy of Andy Jessup, Applied Physics Lab, University of Washington.)

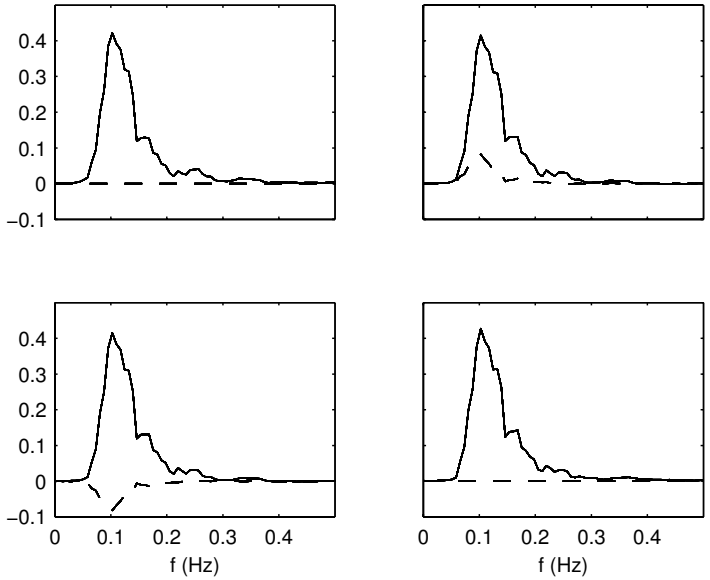

Figure 38: The estimated spectral matrix, $\hat{\mathbf{S}}(\cdot)$, for the two ocean wave time series. The real and imaginary parts of $\hat{S}_{X_l X_m}(\cdot)$, $l, m = 1, 2$, are shown by solid and dashed lines, respectively.

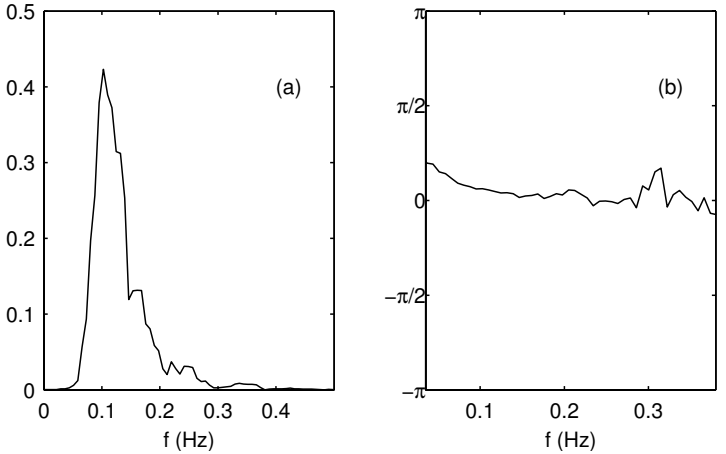

Figure 39: (a) Estimated cross-amplitude spectrum $|\hat{S}_{X_1 X_2}(\cdot)|$, in the interval $[0, 0.5]$ Hz and (b) estimated phase spectrum $\hat{\theta}_{X_1 X_2}(\cdot)$, in the interval $[0.035, 0.38]$ Hz, for the two ocean wave time series .

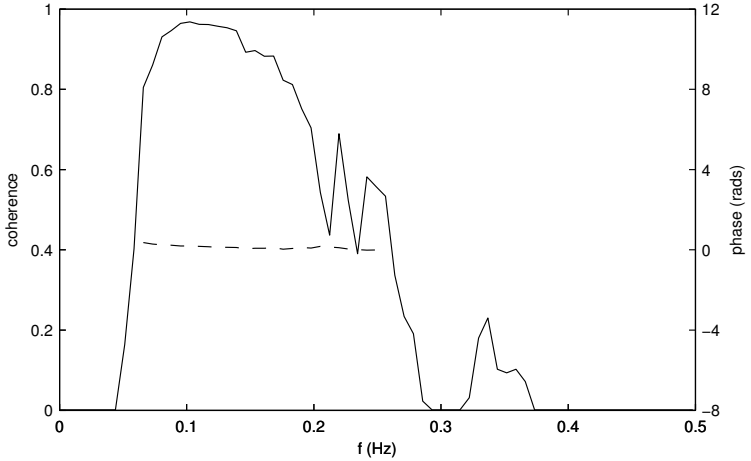

Figure 40: Coherence estimate for the two ocean wave time series. Also shown (dashed line) is the estimated phase $\hat{\theta}_{X_1X_2}(f)$ over frequencies for which the estimated ordinary coherence exceeds 0.5.