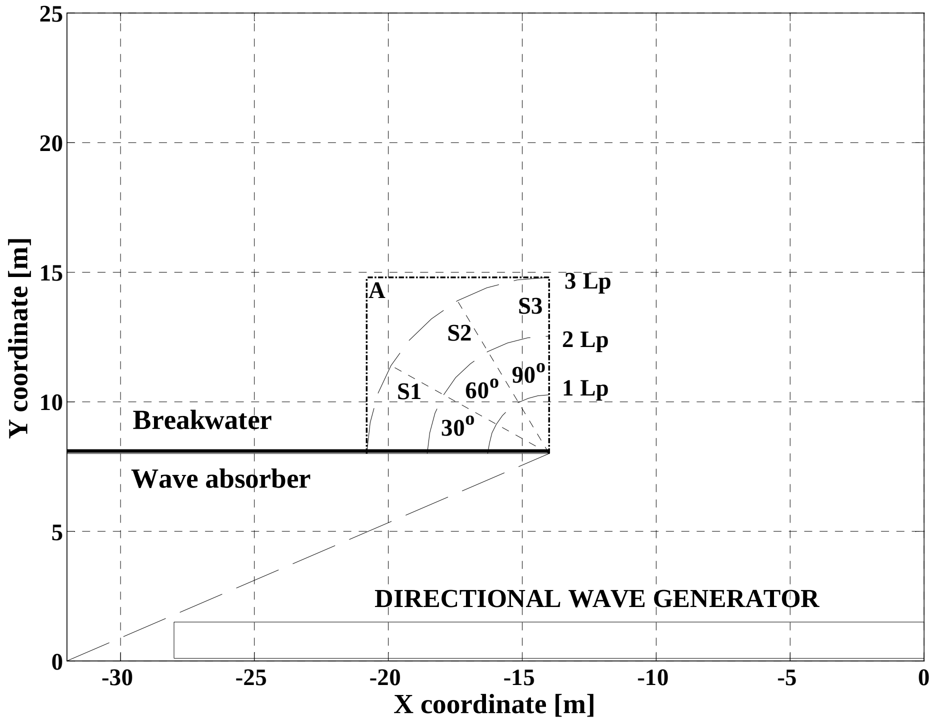

Figure 1: Physical model layout for Briggs' (1995) experiment; insert A shows the area were the measurements are taken and it is plotted in Figures 3 and 4.

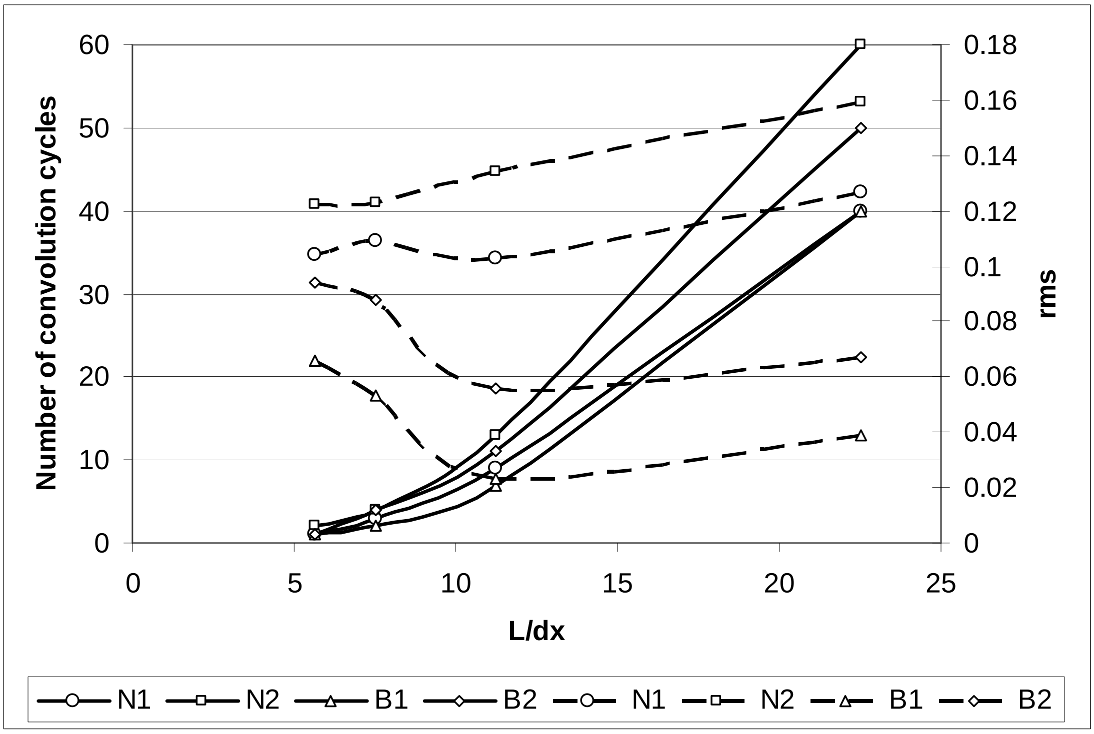

Figure 2: Summary of convolution cycles and *rms* for four cases and different grid spacing. Legend: full lines show the number of convolution cycles, whereas dashed lines show *rms*.

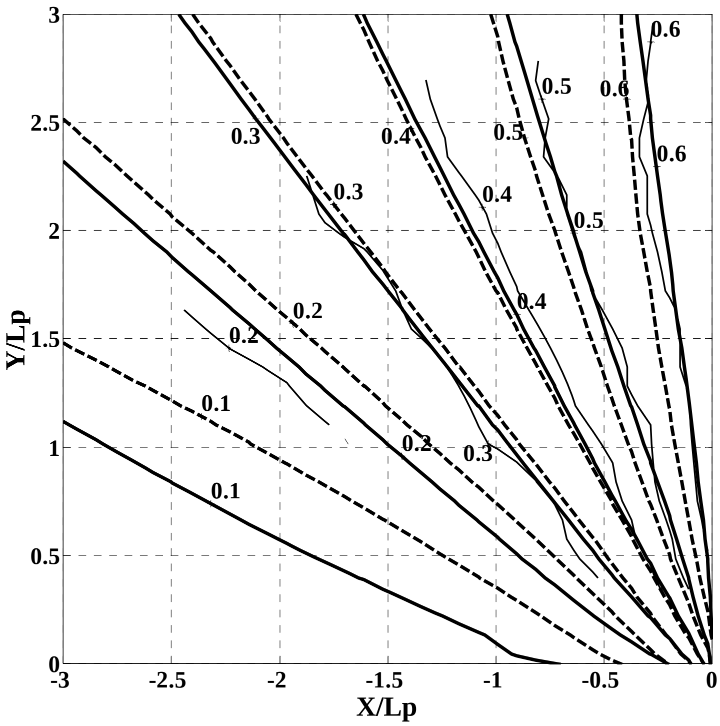

Figure 3: Comparison of diffraction coefficients for Briggs' test – case B1 - Δx=Δy=0.2, 7 convolution cycles, Lp is the wavelength corresponding to the peak period (2.25m). Legend: bold line - SWAN2 with diffraction, dashed line -SWAN1 without diffraction, full line – measurements.

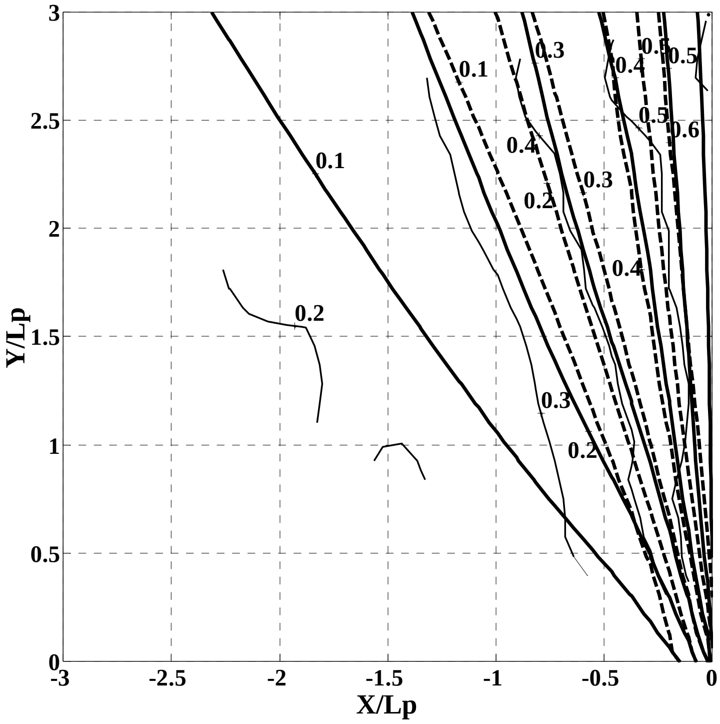

Figure 4: Comparison of diffraction coefficients for Briggs' test – case N2 - Δx=Δy=0.2, 13 convolution cycles, Lp is the wavelength corresponding to the peak period (2.25m) (legend as in Figure 3).

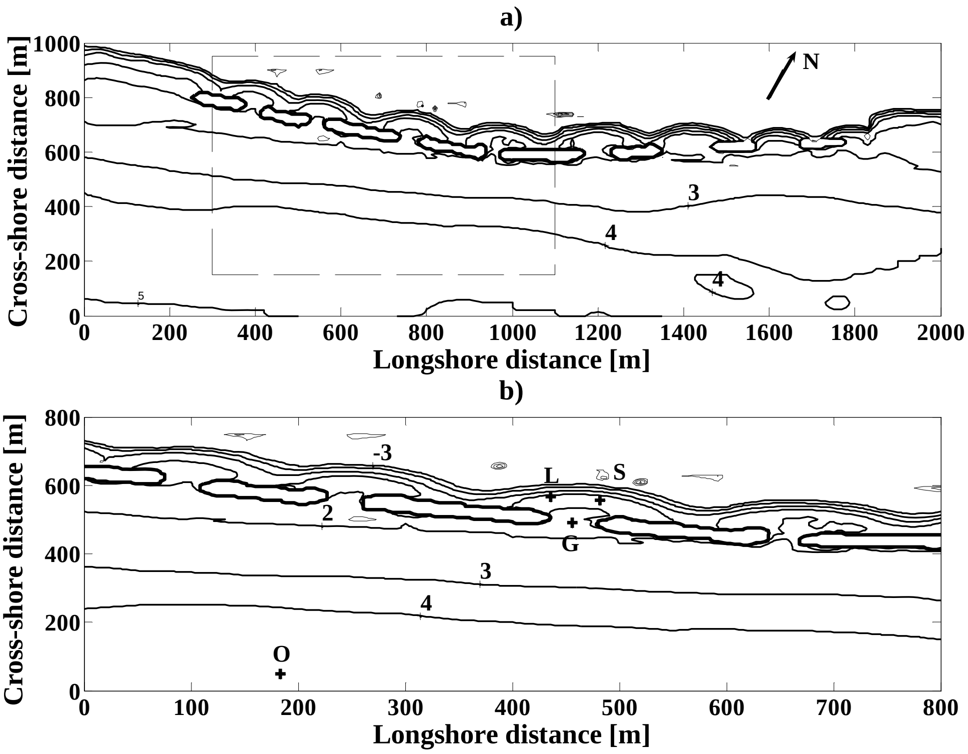

Figure 5: Elmer scheme. a) whole area; b) insert shows the area used as a computational domain. O, G, S and L stand for measurement locations offshore, in the gap, shoreward of the gap and lee of the breakwater, respectively.

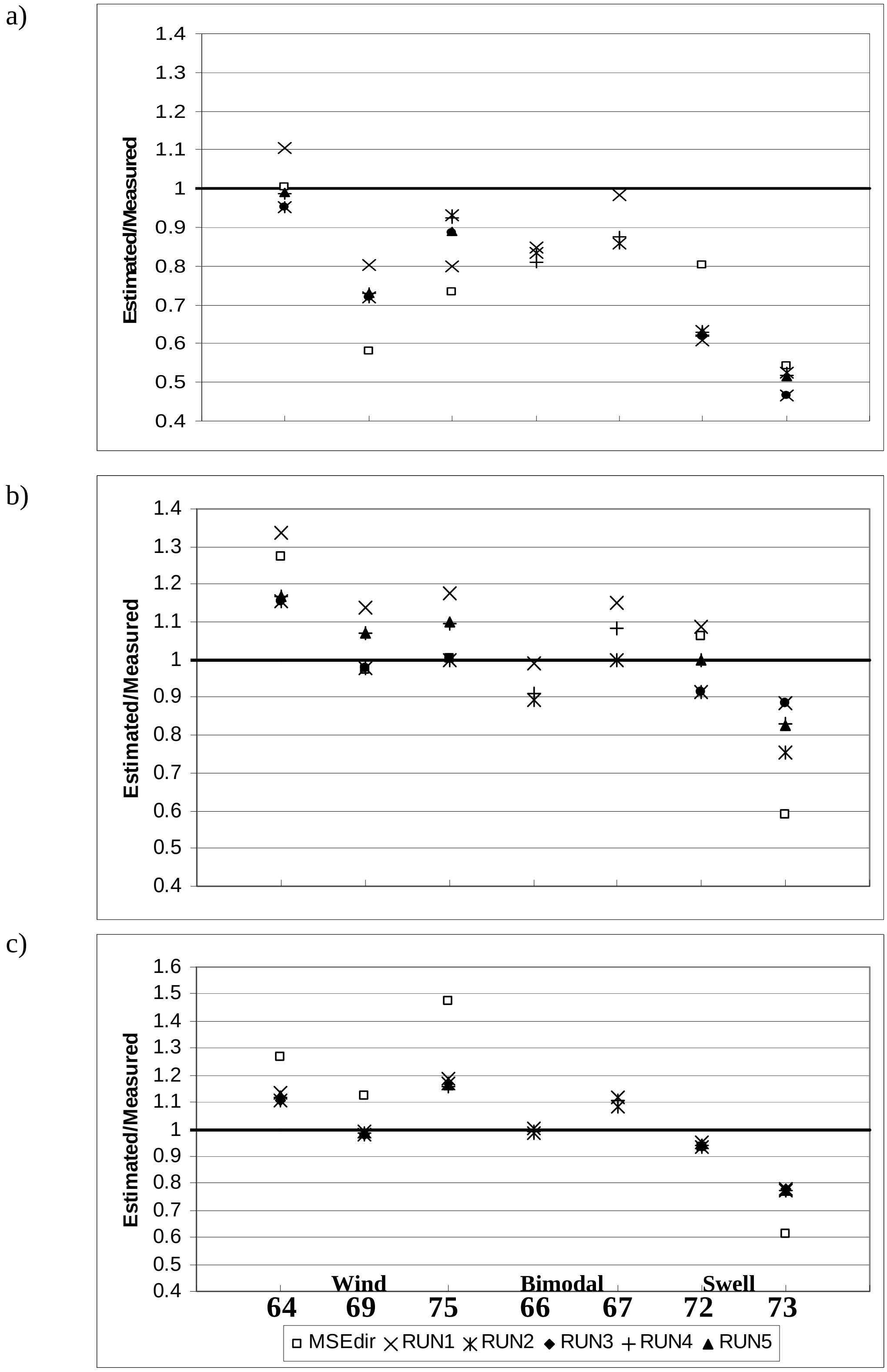

Figure 6: Ratio of estimated over measured wave heights: a) lee of the breakwater, b) shoreward of the gap; c) in the gap for RUN1-RUN5 and the mild-slope model.

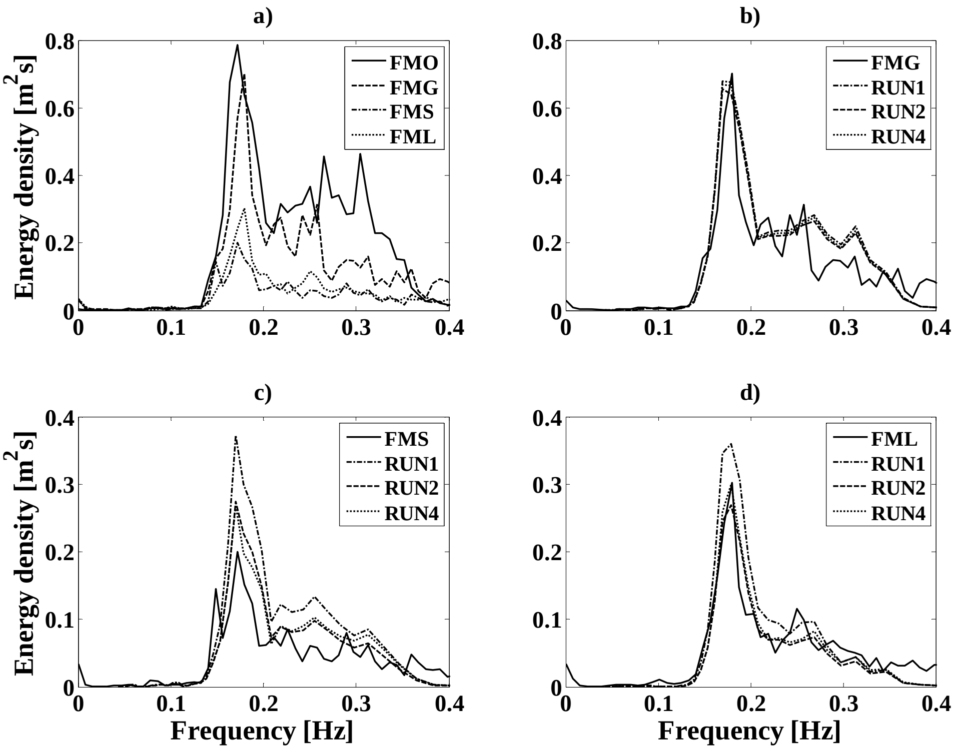

Figure 7: Measured and computed normalised energy density spectra for wind-sea data set 64 – a) measured spectra at four locations; b) comparison of measured and estimated in the gap; c) comparison of measured and estimated shoreward of the gap; d) comparison of measured and estimated in the lee of the breakwater. Legend: FMO stands for measured offshore, FMG stands for measured in the gap, FMS stands for measured shoreward of the gap and FML stands for measured in the lee of the breakwater.

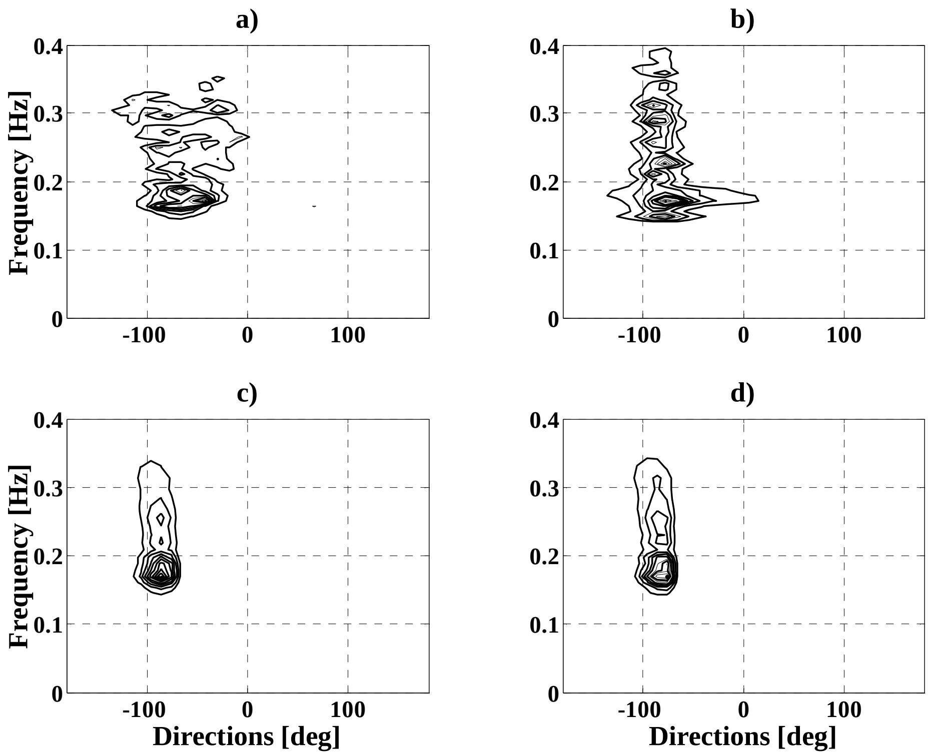

Figure 8: Measured and computed offshore and inshore directional spectra for wind-sea data set 64: a) measured offshore; b) measured inshore; c) computed inshore RUN2; d) computed inshore RUN4. Legend: all normalised to the maximum energy density in m^2/Hz/deg, contours in range 0:0.1:1.

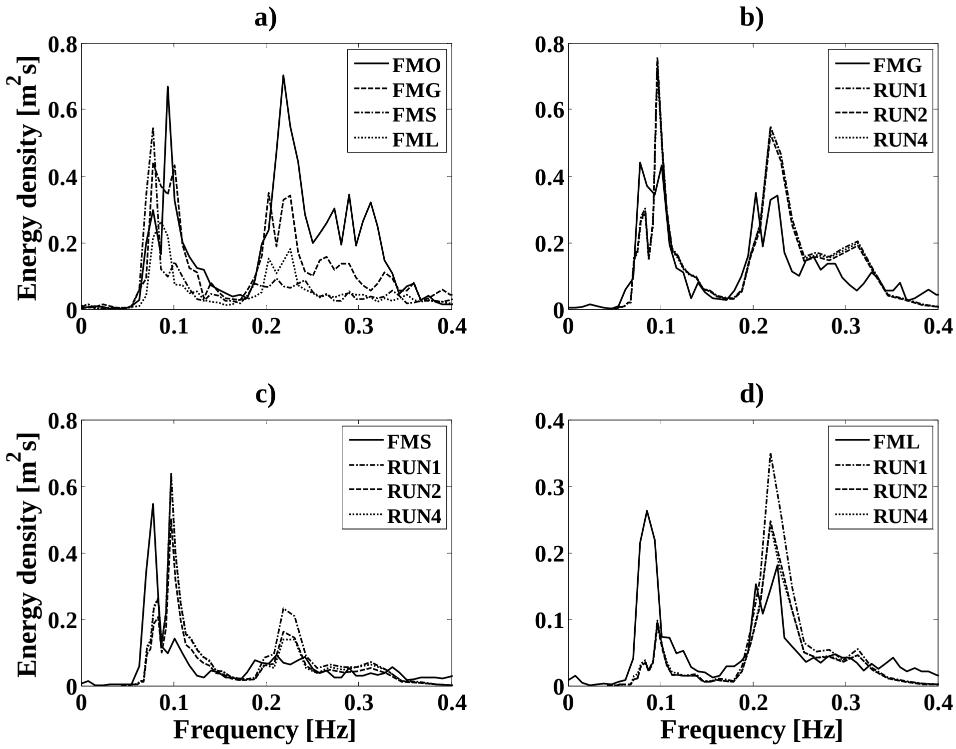

Figure 9: Measured and computed normalised energy density spectra for bimodal data set 67 – a) measured spectra at four locations; b) comparison of measured and estimated in the gap; c) comparison of measured and estimated shoreward of the gap; d) comparison of measured and estimated in the lee of the breakwater (legend as in Figure 7).

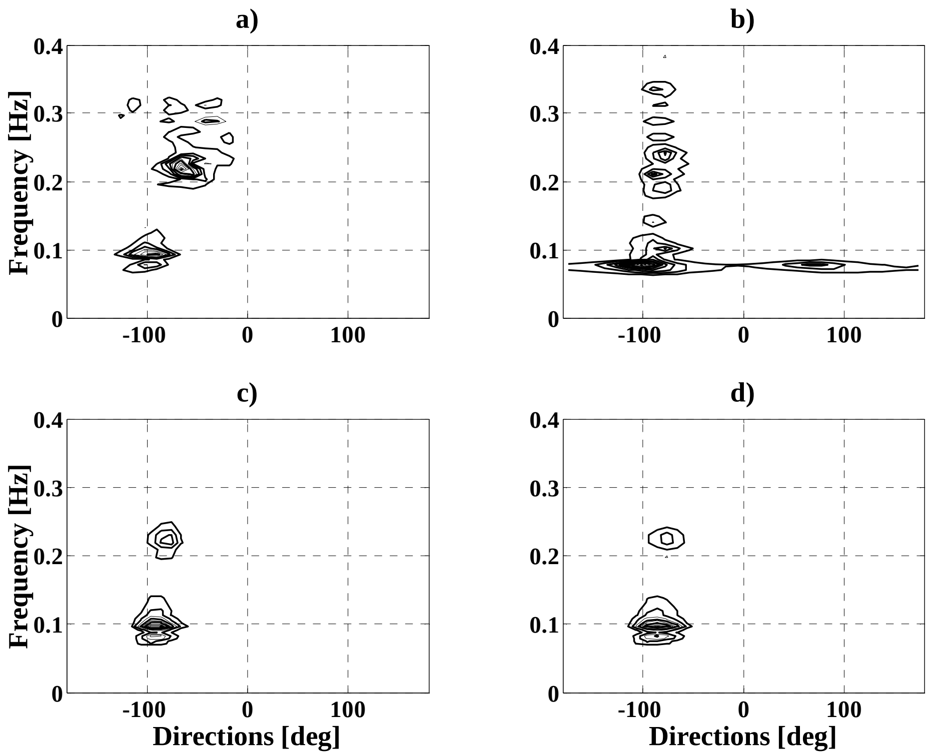

Figure 10: Measured and computed offshore and inshore directional spectra for bimodal data set 67: a) measured offshore; b) measured inshore; c) computed inshore RUN2; d) computed inshore RUN4 (legend as in Figure 8).

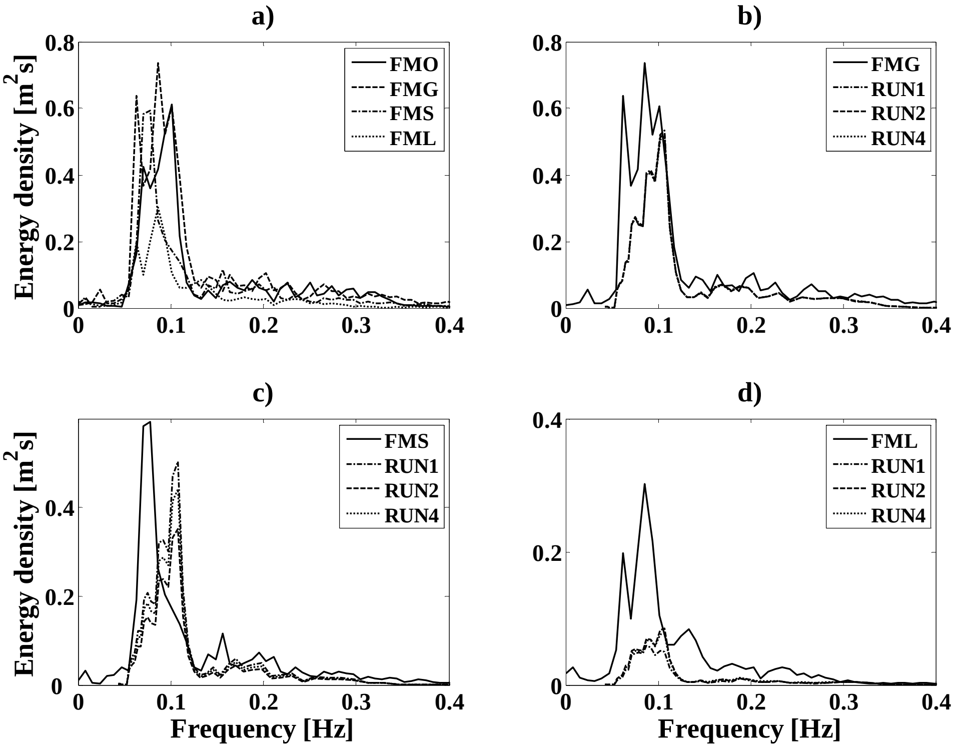

Figure 11: Measured and computed normalised energy density spectra for swell data set 73 – a) measured spectra at four locations; b) comparison of measured and estimated in the gap; c) comparison of measured and estimated shoreward of the gap; d) comparison of measured and estimated in the lee of the breakwater (legend as in Figure 7).

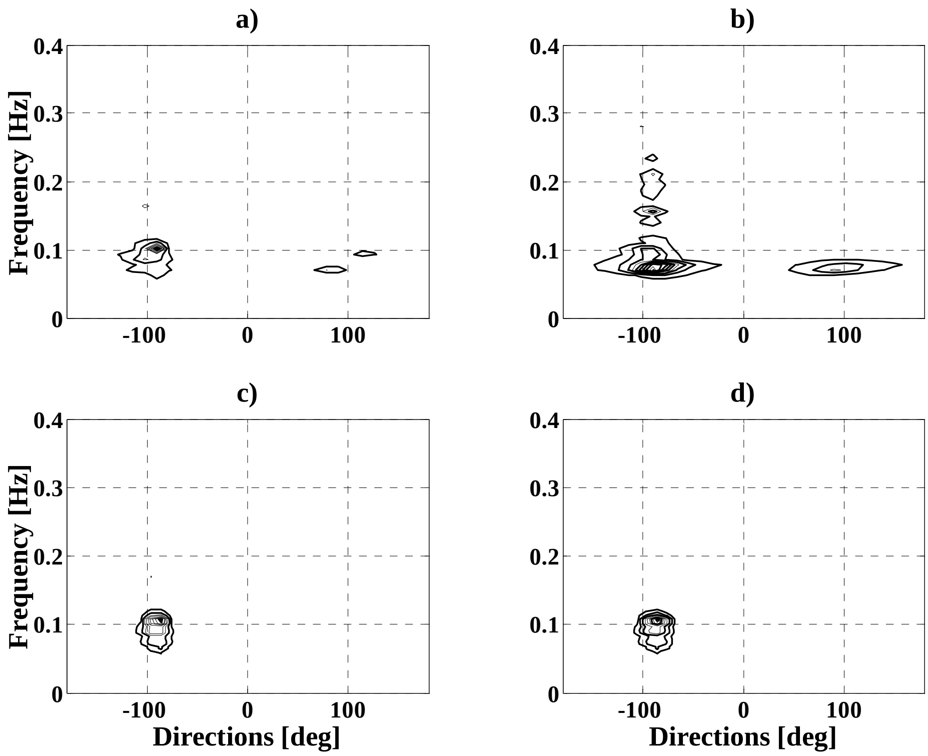

Figure 12: Measured and computed offshore and inshore directional spectra for swell data set 73: a) measured offshore; b) measured inshore; c) computed inshore RUN2; d) computed inshore RUN4 (legend as in Figure 8).

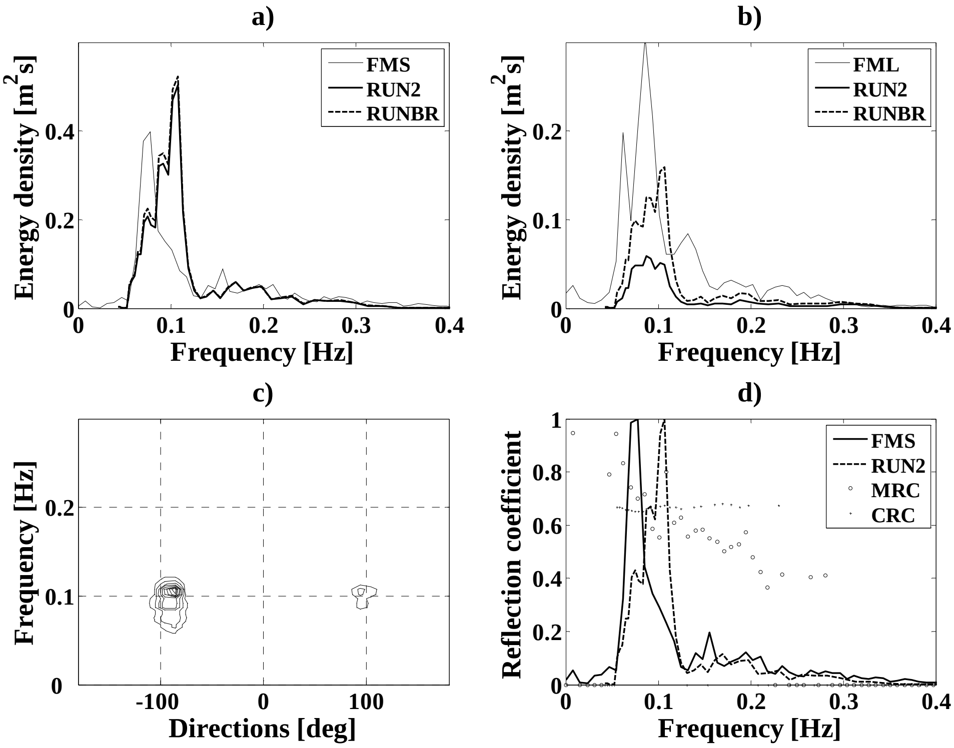

Figure 13: Influence of beach reflection on energy density predictions for swell data set 73: a) shoreward of the gap; b) lee of the breakwater; c) computed directional spectrum (m^2/Hz/deg); d) comparison of measured and predicted frequency dependent reflection coefficients plotted over normalised measured and predicted spectra. Legend: RUNBR stands for sensitivity tests with reflection =0.83 at two grid spacing from the boundary, MRC stands for measured frequency dependent reflection coefficient, CRC stands for computed frequency dependent reflection coefficient, FMS and FML as in Figure 7.

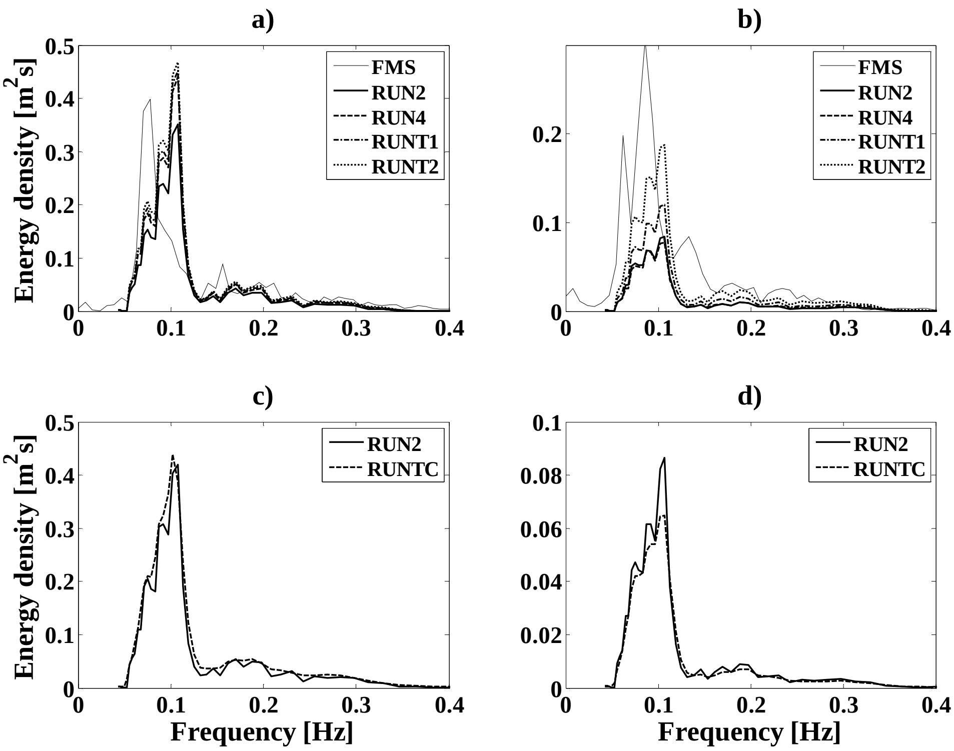

Figure 14: Influence of transmission and tidal currents on energy density predictions for swell data set 73: influence of transmission a) shoreward of the gap; b) lee of the breakwater; comparison of spectra with and without tidal currents c) in the gap and d) lee of the breakwater. Legend: RUNT1, RUNT2 and RUNTC are sensitivity tests with transmission coefficient 0.4 and 0.6, and with tidal currents, respectively.