gives an indication of what might be achieved on an East Coast site, where wave periods are shorter. In this case, quite a strong reflection can be achieved due to the fact that water depth over the bar field does not significantly change over the short spatial interval of the bar field.

Finally, the effect of tidal elevation on the response of a given configuration must be considered. Increasing tidal elevation causes greater submergence of the bar field and thus reduces the effectiveness of the reflection process. The change in depth/bar spacing also shifts the Bragg-resonant peak relative to a fixed range of wave periods. Figure 16 shows the response of the 4 bar array with $40-40-40m$ spacing and $30-40-50m$ spacing for a tidal elevation of LLW+$1.61m$. For the regular spacing, the peak is shifted down to $\sim 13sec$ from $14sec$, and the overall magnitude of the reflection is dropped to ~ 0.2 from 0.4. For the irregular spacing, the response is still broad in comparison to the regularly-spaced bars, but the overall magnitude of the reflection is similar to the regular-spacing case, and the downshifts in wave period are also similar.

4.4 Discussion of computational limitations

For the bar fields considered here, two factors are likely to conflict with the goal of computational accuracy of the results. First, for tidal stages corresponding to LLW, submergence of the shoreward bar is slight and waves are likely to be breaking over the bar crest. This effect could possibly be incorporated in the model by adapting a breaking wave scheme from an empirical viewpoint, but strong nonlinearities would not be properly accounted for. Secondly, for the lower water levels tested, the bar height/water depth is as large as 0.7, and the perturbation scheme adopted here is invalidated. Previous results obtained by Dalrymple and Kirby (1986), using the boundary integral method for linear wave theory, have indicated that the present method starts to overpredict reflection as the limits of it's validity are exceeded. It may be neccessary to develop the boundary integral method for the cases studied here in order to obtain estimates of reflection for configurations having shallow submergence.