Review of OMAE2005-67434

The paper presents an analysis in the time domain of a submerged, gas-filled elastic membrane in waves. The pulsation and motion of the submerged sphere is of interest in the context of a wave-energy extraction device. The analysis is complete and the paper is presented in a clearly written manner. Several additions and clarifications would improve the paper.

1) A more complete description of the size and scale of the proposed device would be useful to put the analysis in context. A description of details such as the total volume change of the sphere relative to the wave amplitude, an estimate of the expected power potential of such a device, and a description of how the results of this analysis will aid in the design of the device would be useful. The reviewer recognizes that this paper is an extension of previous work in the frequency domain on this topic, and presumably the details of the wave-energy extraction device are covered elsewhere. Also, a description of the size of the system under study is made in the Results and Discussion section, but nevertheless, it would be useful to have a summary of these details presented earlier.

2) This work is an extension of an analysis in the frequency-domain to the time-domain, and a comparison of results. As the authors note, the primary reason for moving to the time-domain is to improve ones ability to include non-linear effects in the numerical model. The papers results show a convergence of the frequency-domain and time-domain results as the incident wave amplitude decreases, clearly showing a non-linear effect. It would be very useful for the reader if there were a clear statement of what non-linear effects are included with the change to the time-domain. Furthermore, a speculation on what other non-linear effects might be important, and the needed additions to the numerical model that would be required to realize their inclusion would be a good addition to the conclusion section.

Finally, a few typographical errors are noted for the convenience of the authors:

1) Introduction, 2nd paragraph, 6th sentence: "identical to the previously presented in …", should be "identical to the work previously presented in…".
2) Introduction, 4th paragraph, 2nd sentence: "wave through" should be "wave trough".
3) Mathematical Analysis section, 3rd sentence after equation (9): "should be point out" should be "should be pointed out".
4) Results and discussion section, paragraph before figure 6, 1st sentence: "as expect" should be "as expected".
5) Conclusion, 3rd sentence, "it was showed" should be "it was shown".