

***Interactive comment on* “Study on the influence of seafloor soft soil layer on seismic ground motion” by Jingyan Lan et al.**

Anonymous Referee #2

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I have read with great interest the paper entitled: ‘Study on the influence of seafloor soft layer on seismic ground motion’, by Lan et al. The manuscript is very well written and organized. The authors summarized the previous research results carefully, and pointed out the existing problems of ground motion response analysis in sea area engineering. Several groups of representative sea area site models were calculated and analyzed by finite element method, and the effects of overlying sea water and soft soil surface on ground motion are analyzed in this paper. I think this study represents an important contribution to the seismic safety evaluation of marine engineering. I recommend publication with minor revisions. My minor suggestions are listed below: (1) What is the unit of length in Figure 1? I think it should be “meter”, but it is not mentioned in that section. (2) Line110, the compression coefficient of overlying water and

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Poisson's ratio of soil are mentioned in this section, which are important parameters for dynamic analysis calculation, but they are not given in this paper. (3) Line118, there are something wrong with the units in Table 1, for example, the units of stiffness and modulus should be kPa, rather than MPa. (4)Line156, the title of Table 3 is wrong, it should be the amplification factor. (5) It is suggested that the amplification factor ratio of response spectrum between the surface and the base input should be given, so that we can know in which period the amplification of the four models is the most significant. It is necessary to do proper analysis and discussion. (6) The Mohr-Coulomb constitutive model used in this paper is an ideal elastic-plastic model. It is suggested that the reason for using this constitutive relation should be discussed in this paper.

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