

ANSYS

Using Finite Element in Investigation of Waves-Induced Dynamic Responses of a Floating Structure under Sea Waves

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ABSTRACT

Determining the responses of floating structures the sea are the most important concerns in shipbuilding industry. In physical and dynamical principles a ship can be analyzed as a free elastic beam floating in sea without any supports. The analysis of corresponding dynamic equations are difficult and time-consuming, thus investigation on the behavior of floating structures can be done numerically using specific software. In this research, instead of using expensive specific software, ANSYS 5.5 as a typical finite element software is used for investigating the effect of various parameters on an assumed floating structure. In this way, after structural modal analysis, modeling and analysis of the structure with variation on its properties under different sea environment have been done and the responses are illustrated Amid-ship moment is one of the most important and effective parameters in ship design. In this paper, due to different

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ship speed and stiffness of cross section, amid-ship moment beside the shear force of various cross section along the ship are considered and the critical shear cross section is determined.

KEYWORDS

Floating structures, Modal analysis, Finite element, Sea waves, Amid-ship moment, Shear force,

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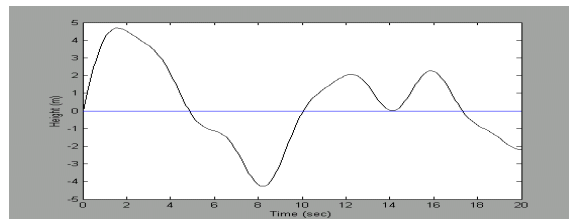
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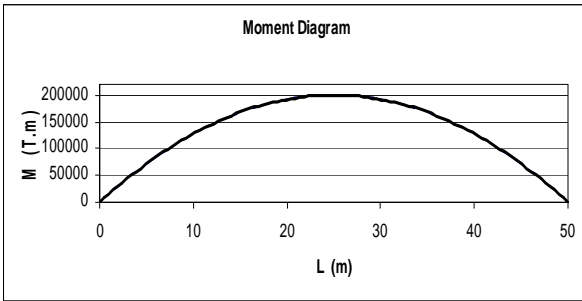


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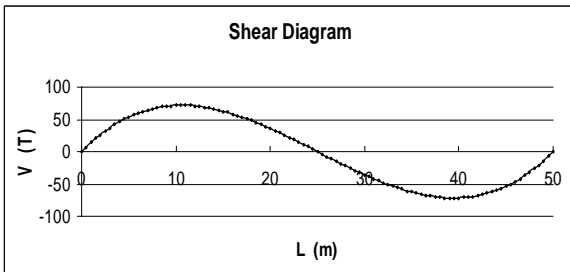
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۵	۱/۱۷۷۲	سوم خمشی	
۶	۱/۶۴۶	تغییر طول ۱	
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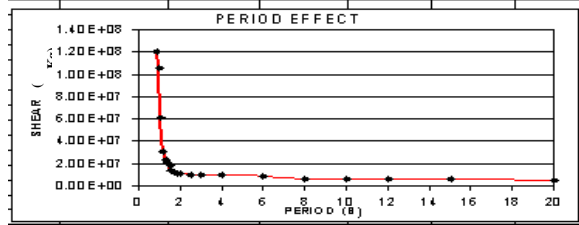
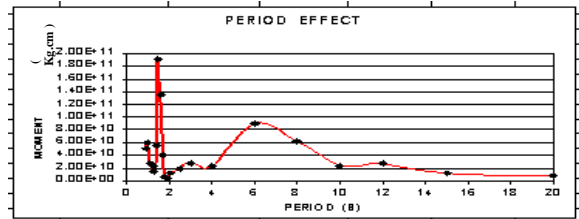
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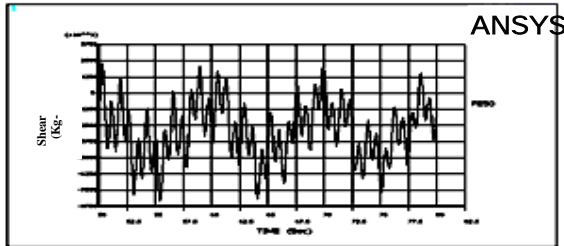
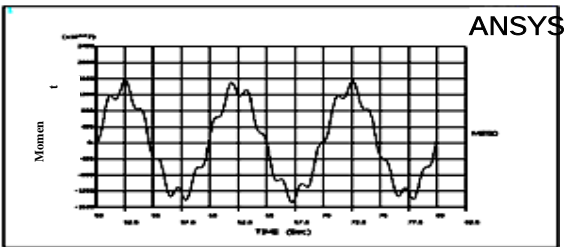
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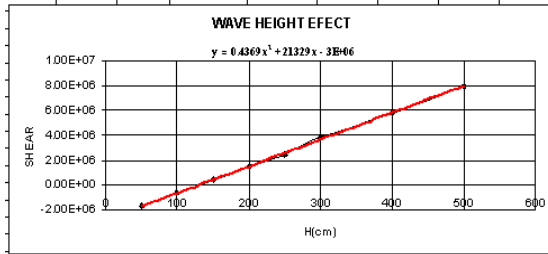
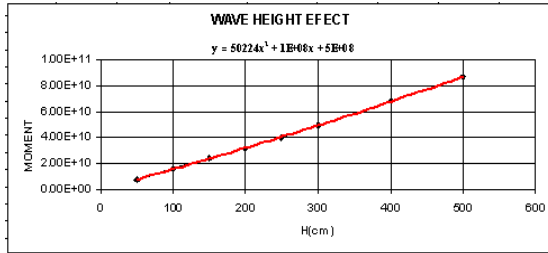
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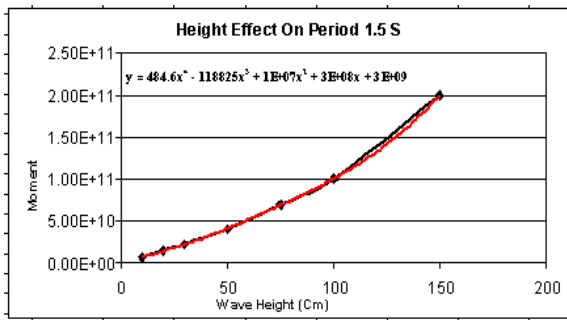


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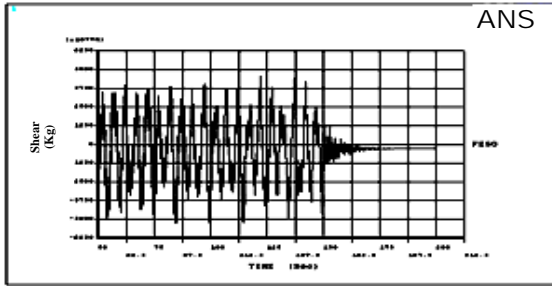
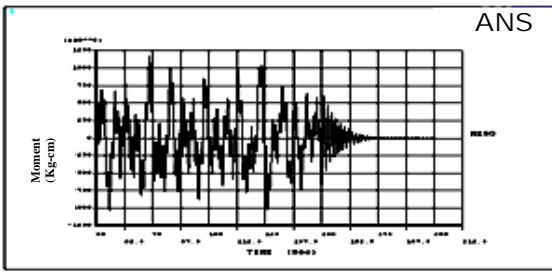
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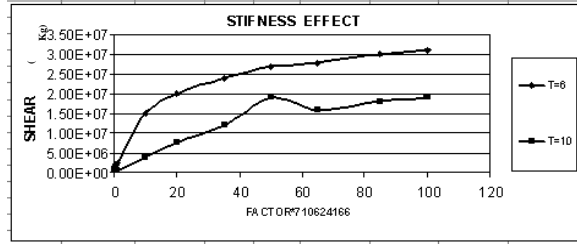
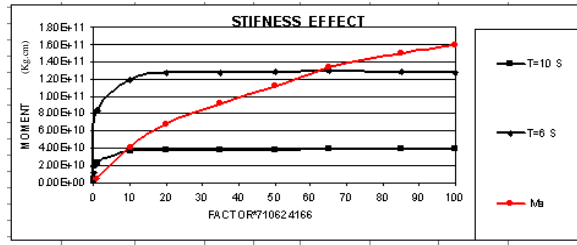
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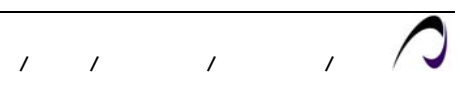
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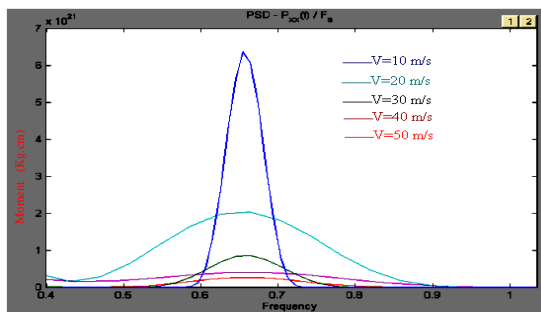
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- .Free Beam
- .Gap
- .Long Creast
- .Head Sea
- .Steps and Substeps
- .Slamming
- .Springging
- .Resonance

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