

Jakob Saksida:

VPLIV VALOVANJA MORJA NA KONSTRUKCIJE

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Povzetek

Želja po raziskovanju sveta je človeka pripeljala do morja, od koder je lahko osvajal nove celine, kar je potegnilo za seboj veliko inženirskih podvigov (boljše ladjevje, izgradnja pomolov, valobranov). Naslednji glavni mejnik sta bili svetovni vojni, kjer so pomorske gradnje oplemenitili z novimi materiali, predvsem železom. Slovensko morje in Tržaški zaliv imata pomembno vlogo za oskrbo Evrope z energenti, kar zahteva povečevanje kapacitet in večanje pomorskih gradenj. V svoji seminarski nalogi sem preučil vpliv valovanja morja na konstrukcije. Seminar sem razdelil na dva sklopa. V prvem sklopu sem povzel teorijo valov malih amplitud, zaradi lažjega razumevanja valovanja. V drugem sklopu pa sem povzel teorije, ki nam prikažejo vpliv valovanja na konstrukcije, kar je osnova za dimenzioniranje in načrtovanje pomorskih zgradb. Kajti v tako velikem sistemu kot je morje, je kljub novi tehnologiji problem določiti merodajno obtežbo na konstrukcijo. Opisani so vplivi morja na vertikalne zidove in na zidove v naklonu; sestavljene gradnje; valobrane; potopljene cevovode; pilote, potopljene objekte večjih dimenzij.

Ključne besede: valovanje morja, vpliv valovanja morja, pomorski objekti

Abstract

The desire to explore the world led men to the sea, from where they continued to conquer new continents and that led to many engineering achievements (better fleets, construction of piers, jetties). The next major milestone were the two world wars, when they enriched marine facilities with new materials, especially iron. Slovenian sea and the Gulf of Trieste have an important role for the supply of energy to Europe, which can be seen in increased capacities and enhancement of marine facilities. In my research project I examined the impact of sea waves on constructions. I split my work in two parts. In the first part I examined the theory of waves of small amplitudes so as to better understand them. In the second part I summed up the theories which demonstrate the impact of waves on structures, which is the basis for design and planning of marine buildings. In a large system such as the sea, it is not easy to determine the proper weight for a structure, despite the new technologies. Described are the effects of the sea on vertical and sloped walls, composition of structures, jetties, submerged pipelines, piles and submerged objects of larger dimensions.

Key words: water wave mechanics, effect of waves, marine structures