ICCE 2010

Shanghai, China

June 30 - July 5, 2010

32nd International Conference on Coastal Engineering

Book of Abstracts

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The 32nd International Conference on Coastal Engineering (ICCE 2010)

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32nd International Conference on Coastal Engineering
June 30 --- July 5, 2010, Shanghai, China

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Foreword

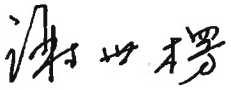
The 32nd International Conference on Coastal Engineering (ICCE 2010), which will be convened on June 30 to July 5, 2010, in Shanghai, is the first of its kind ever held in the mainland of China. Delegates from 46 countries will gather in this great event.

A total of 725 papers were submitted. After review jointly by Technical Paper Review Committee (TPRC), Coastal Engineering Research Council (CERC) and the Local Organizing Committee (LOC) of ICCE 2010, the abstracts-in-depth of 436 papers and 55 posters have been selected for inclusion in this Book of Abstracts.

With the rapid development of science and technology in recent years, much progress has been made in the basic theory, computational methodology and data processing approaches in coastal engineering studies; the understanding of various physical phenomena in coasts and seas has been deepened; and the relationship among various disciplines has become much closer. The accepted papers and posters cover the science and technology relating to planning, design, management and construction for coastal protection, estuary training and port engineering, including topics on wave; swash, nearshore currents and long waves; coastal management, risk and environmental restoration; sediment transport and morphology; and coastal structure. Interdisciplinary topics, covering more than three sub-disciplines, number quite a few, leading to the understanding that scientists of today and in the future need a more comprehensive and integrated ability to handle various problems. This conference will surely help to broaden the vision of coastal researchers and engineers, trigger new approaches and concepts, and promote the development of coastal engineering studies, which is the very goal of ICCE conferences.

We wish to express our sincere thanks to the organizer and hosting institutions of ICCE 2010 for their hard work to ensure the success of the conference; thanks also to the sponsoring and supporting institutions and exhibitors for their strong support of and active participation in the conference. We believe that delegates from all over the world will enjoy their participation in ICCE 2010 both academically and culturally.

May ICCE 2010 be a great success!



Xie Shileng
Chairman, LOC
ICCE 2010

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Paper No. 212

EXPERIMENTAL RESULTS OF BREAKING WAVE IMPACT ON A VERTICAL WALL WITH AN OVERHANGING HORIZONTAL CANTILEVER SLAB

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INTRODUCTION

Vertical breakwaters and seawalls are frequently used to protect land from sea action such as high water levels and waves. They have to be designed to resist quasi-static loads as well as short but intensive violent wave impacts. Because of stricter regulations and changes in environmental conditions, vertical walls would be dimensioned higher for tolerable wave overtopping. Therefore, most coastal engineers/designers provide the vertical walls with return crown walls or even a completely horizontal cantilever slab to reduce the wave overtopping. However, wave impacts on horizontal decks (or return crown walls) introduce an important uplifting force. The lift forces consist of impact loads which of high magnitude and short duration. It is reasonably impossible to substitute these impact effects by a static equivalent. A detailed description of the space and time distribution of the wave impacts thus becomes imperative.

In the past decades, the qualitative and quantitative determination of wave loads on vertical structures has already been examined (e.g. Oumeraci et al., 2001). Uplift loads below horizontal decks have been investigated (e.g. McConnell et al., 2003) and recently prediction methods for wave loading have been developed in several research projects (e.g. Coumo et al., 2007). Contrary to the previous simple vertical wall or horizontal decks, structures consisting of both vertical parapets and horizontal cantilevering slabs have scarcely been considered.

OBJECTIVES / EXPERIMENTS

The main objective of the present research, is to bring a new design tool to assess violent water wave impacts on a vertical wall, including an overhanging horizontal cantilever slab, based on the correlation between the kinematics of breaking waves and the height, distribution, duration and characteristics of the violent wave impacts. In this particular research, small scale model tests were carried out to fulfil the above goals.

In the model tests, the wave period T, wave height H and water depth h are considered as variable input parameters. Tests are conducted for four different values of water depth and wave period. For each combination of parameters, wave heights ranging from non breaking to broken waves are considered and measurements are done for 18 regular waves.

RESULTS

Figure 1 shows the spatial distribution of peak pressure values both on the vertical and horizontal parts on a time interval showing thirty associated impacts for regular waves with wave period T = 2.2 s and sampling frequency 20 kHz. The most spectacular peak pressures were recorded at the SWL (y = 13.5 cm) on the vertical part and at the corner (x = 1 cm) of the horizontal part.

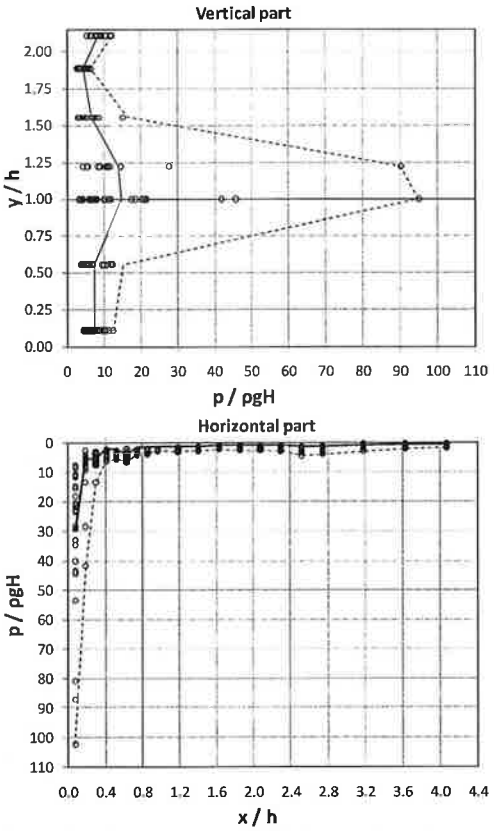

Figure 1 - Peak pressure distribution both on the vertical and horizontal part for thirty regular waves (h = 13.5 cm, T = 2.2 s, sampling frequency = 20 kHz and Hi = 0.115 m). Dashed and continuous lines indicate maximum and mean peak pressure values respectively

Within this paper, an overview of small scale model tests set up will be provided. This will be followed by the description of how the pressure can vary with the change of incident wave height, period, water depth and reflection coefficient. Based on the discussion of the test results, conclusions will be formulated.

REFERENCES

Oumeraci, H; Kortenhaus, A; Allsop, W; de Groot, M; Crouch, R; Vrijling, H; Voortman, H, (2001), "Probabilistic Design Tools for Vertical Breakwaters", Balkema Publishers, New York.

McConnell, K.J; Allsop, N.W.H; Cuomo, G; and. Cruickshank, I.C, (2003), 'New guidance for wave forces on jetties in exposed locations', Proc. Conf. COPEDEC VI, Colombo, Sri Lanka

Cuomo G.; Tirindelli M.; and William Allsop W., (2007), 'Wave-in-deck loads on exposed jetties', Coastal Engineering Vol. 54(9), pp: 657-679