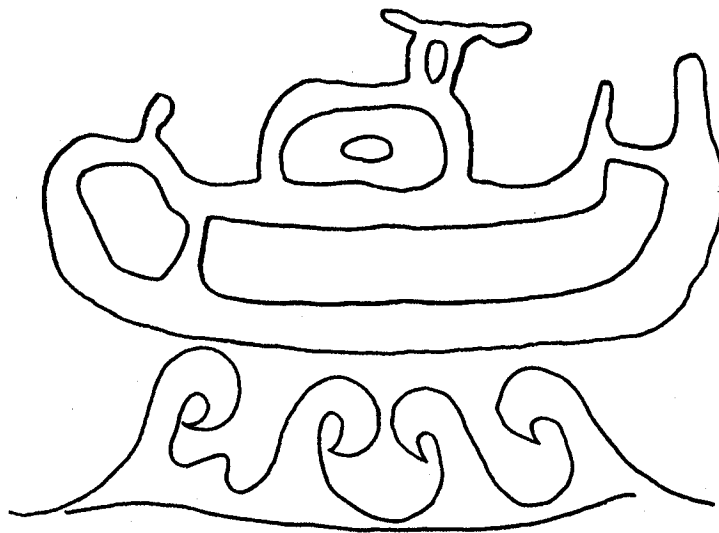


The Ninth International

Workshop on Water Waves and Floating Bodies

Kuju, Oita, Japan

17-20 April 1994



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and Floating Bodies**

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Research Institute for Applied Mechanics
Kyushu University
Kasuga, Fukuoka
JAPAN

ABSTRACT

A workshop was held on 17-20 April 1994 for specialists performing theoretical research on the interactions of water waves with floating or submerged bodies. This report contains extended abstracts of the presentations and summaries of the discussions.

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INTRODUCTION

The Ninth International Workshop on Water Waves and Floating Bodies was held at Kuju-Kogen, Kyushu, Japan, from 17th to 20th April 1994. The Workshop was organized by Research Institute for Applied Mechanics, Kyushu University.

A total of 52 papers were accepted for presentation of the Workshop. Participation was based on submitted abstract of each talk with the exception of several invited honor guests from Japanese community of marine hydrodynamicists. As parallel sessions was avoided to preserve the atmosphere of the Workshop, 52 was the largest number of papers to be admitted in four days program. The total participants were 69. Five of the accepted papers were not presented since the authors of the papers could not come.

I believe a high standard of content was maintained and discussions were deep and thorough by virtue of intimate and informal atmosphere as at the previous Workshops. I do hope this good tradition will be retained in the future Workshops.

Abstracts of the presentations and transcripts of discussions are contained in this report in alphabetical order of the first author's name. Also included is a list of titles and authors, and a list of participants' names and addresses.

Financial support for the Ninth Workshop was provided by Yokatopia Foundation, Fukuoka Nanasha-Kai, Akishima Laboratories (Mitsui Zosen), Hitachi Zosen Corporation and West Japan Fluid Engineering Laboratory. This support has been most helpful in providing travel assistance to young participants who could not otherwise have attended and realizing moderate fee of the Workshop to cope with high prices in Japan. The organizers and participants are grateful to those organizations for their support of this Workshop.

We thank Ms. Mizuho Nakatake and other personnel of Research Institute for Applied Mechanics for their substantial administrative assistance to organize the Workshop so successfully. We also acknowledge the significant contribution of the staff of Kuju Lake Side Hotel to the success of the Workshop by providing the participants with the best environment for the Workshop, comfortable accommodations and good food.

Picture on the cover of this report will need brief explanation. It is taken from tomb painting of a king who ruled a province of Kyushu in the 7th century. The ship in this painting appears to be not a simple boat but a sea-going vessel with hull structure.

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LIST OF PRESENTATIONS

1. **Ando S.** : Calculations of Surface-Wave Radiation and Diffraction by Regularized Composite Integral Equations
2. **Armenio V.** : A New Algorithm (SIMAC) for the Solution of Free Surface Unsteady High Reynolds Flows
3. **Ba M. & Guilbaud M.** : The Translating Pulsating Green's Function for Free Surface Computations
4. **Bao W. & Kinoshita T.** : The Reciprocal Relation of Hydrodynamic Forces Acting on Floating Bodies in both Waves and Slow Current
5. **Bertram V.** : Shallow Water Effects for SWATH Ships
6. **Bingham H.B. & Korsmeyer F.T.** : The Role of Irregular Frequencies in the Transient Neumann-Kelvin Problem
7. **Cao Y., Beck R.F. & Shultz W.W.** : Nonlinear Computation of Wave Loads and Motions of Floating Bodies in Incident Waves
8. **Chee W.S., Choi Y.R & Choi H.S.** : Nonlinear Diffraction of Modulated Waves by a Thin Wedge
9. **Clarisse J.M., Newman J.N. & Ursell F.** : Asymptotic Expansion of the Cauchy-Poisson Problem in a Fluid of Finite Depth
10. **Clement A. & Mas A.** : Computation of the Finite Depth Time-Domain Green-Function in the Small Time Range
11. **Doutreleau Y. & Quenez J.M.** : A Relation between the Three-Dimensional and the Two-Dimensional Green Functions of the Neumann-Kelvin Problem
12. **Eatock Taylor R., Wang B.T. & Wu G.X.** : On the Transient Analysis of the Wave Maker
13. **Evans D.V.** : On Step Approximations for Water Wave Problems
14. **Fontaine E. & Cointe R.** : Non Linear High-Froude-Number Slender Body Theory
15. **Grue J., Bjorshol G. & Strand O.** : Nonlinear Wave Loads Which may Generate 'Ringing' Responses of Offshore Structures
16. **Huang Z.J. & Hsiung C.C.** : Application of the Flux Difference Splitting Method to Compute Nonlinear Shallow Water Flow on Deck
17. **Iwashita H., Ito A., Okada T., Ohkusu M., Takaki M. & Mizoguchi S.:** Wave Forces Acting on a Blunt Ship Advancing in Oblique Short Waves
18. **Kajitani H.** : On Wave-Wake Interaction near a Ship Stern
19. **Kashiwagi M.** : A New Green-Function Method for the 3-D Unsteady Problem of a Ship with Forward Speed
20. **Kim J.W. & Bai K.J.** : Nonlinear Waves at the Interface of Water and Mud in a Dredged Channel
21. **Kim M.H. & Kee S.T.** : Flexible Membrane Wave Barrier
22. **Korobkin A.** : Shallow-Water Entry Problem
23. **Kuznetsov N.** : Trapping of Waves by Horizontal Cylinders in a Channel Containing Two-Layer Fluid

24. **Kvalsvold J. & Faltinsen O.** : Hydroelastic Study of Wetdeck Slamming by a Timoshenko Beam Model
25. **Kyozuka Y.** : Mass Transport in Two-Dimensional Wave Tank
26. **Lin X., Takaki M. & Iwashita H.** : A Combined Boundary-Integral Equation Method for Determining the Unsteady Flow around a Ship in Waves
27. **Linton C.M.** : The Diffraction of Waves by an Array of Vertical Circular Cylinders in a Channel
28. **Liu Y. & Yue D.K.P.** : The Transient Force History on a Body Started from Rest
29. **Lu Y. & Li B.** : Numerical Prediction of Second-Order Wave Forces on a Twin-Cylinder Array
30. **Malenica S. & Molin B.** : Third Order Triple Frequency Wave Forces on Fixed Vertical Cylinders
31. **Maruo H.** : A Contribution to the Theory of Slender Ships in Large Amplitude Motion with Forward Speed--A Proposed Method of Nonlinear Computation--
32. **Matsunaga K.** : The Slender Body Approximation of a Ship in Following Sea
33. **McIver P. & McIver M.** : Wave Radiation by a Submerged Circular Cylinder of Finite Length
34. **Mori K. & Lungu A.** : Sub-Breaking Wave and its Numerical Simulation with Turbulent Characteristics
35. **Ohkusu M.** : Second Order Radiation Waves at Forward Speed
36. **Palm E. & Grue J.** : Wave Forces on Floating Bodies in Slow Yaw-Motion
37. **Roberts A.J. & Smith D.** : Treatment of the Dynamics of the Intersection of a Free-Surface and a Solid Body
38. **Sturova I.V.** : Hydrodynamic Forces on a Submerged Cylinder Advancing in Waves of Two-Layer Fluids
39. **Takagi M. & Saito K.** : A Strip Theory in the Large Ship Motions
40. **Tanizawa K., Yue D.K.P. & Zhang S.** : Calculation of Breaking Wave Impact on a Wall
41. **Tuck E.O.** : The Planing Splash
42. **Tulin M. & Wu M.** : Bow Waves on Fine Ships - Nonlinear Numerical Studies
43. **Yasukawa H. & Sakamoto T.** : Effect of Steady Disturbance on Free Surface Flow around Slowly Moving Full Hull Forms in Waves
44. **Yeung R.W. & Yu X.** : Transient Waves near a Circular Cylinder in Closed and Open Domains
45. **Zhao R.** : Hydroelastic Analyses of a Floating Flexible Body in Waves
46. **Zhu X. & Lee C.H.** : Removing the Irregular Frequencies in Wave-Body Interactions
47. **Zou Z.J.** : A 3-D Panel Method for the Radiation Problem with Forward Speed