COMPUTATIONAL BALLISTICS

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COMPUTATIONAL BALLISTICS

Brazilian Navy Research Institute (Instituto de Pesquisas da Marinha) IPqM

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PREFACE

In November 04-06, 2002, the Brazilian Navy Research Institute (*Instituto de Pesquisas da Marinha, IPqM*) and the Alberto Luiz Coimbra Post-Graduation and Research in Engineering Institute (*Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa em Engenharia, COPPE/UFRJ*) held the International Conference on Computational Ballistics, (*Encontro em Balística e Mecânica Computacional*, EBMEC), at the Brazilian Navy Research Institute, Rio de Janeiro, Brazil.

Ballistics, as a science, has a broad meaning and is present even in small things in our everyday lives. Terminal Ballistics, perhaps its most important branch, focuses on the study of the interaction between ammunition and a target and the effects caused on it, involving the study of the impact, overall and microscopic structural resistance, behavior, and its integrity. Car crash, combustible reservoir explosions, and bird strikes on airplanes are only three examples of non-military fields of the study of Terminal Ballistics.

The lack of international gatherings where researchers can discuss their recent developments within a broad scope of subjects related to Ballistics led IPqM and COPPE/UFRJ to organize this international scientific conference, therefore providing a novel forum where a general rather than specific audience could make their presentations regarding developments related to their work published. The selected works presented at EBMEC and published in this book, are as a result of the efforts made by both institutions in organizing the Conference, for which I am grateful.

Appreciation is due to Prof. Nelson F. F. Ebecken, Prof. Alvaro L. G. A. Coutinho and Prof. José L. D. Alves (all of COPPE/UFRJ) for their contributions as part of the Organizing Committee, and to CDR Mário Antonio Gagliardi (IPqM) and his staff for their administrative support, as well as to all those who contributed to the success of EBMEC.

Thanks are due to the Navy Executive Secretary of the Science and Technology Council (Secretatria Executiva do Conselho de Ciência e Tecnologia da Marinha - SECONCITEM) to the National Association for Technological Diffusion and Normalization of Ballistic Protections (Associação Nacional para Difusão Tecnológica e Normatização de Proteções Balísticas - ANDB), to the National Council of Scientific and Technological Development (*Conselho Nacional de Desenvolvimento Científico e Tecnológico* - CNPq), and to CENPES/ Petrobrás S.A. for their sponsorship, without which this conference would not have became reality, and to the Brazilian Association for Computational Mechanics (*Associação Brasileira de Mecânica Computacional* - ABMEC), for their valuable support.

The Editor 2003

CONTENTS

Preface
Forewordix
Invited speakers
H-adaptivity modeling of impact problems E. B. Becker & G. C. Bessete
Modeling using the finite element method and its object orientated implementation <i>P. R. B. Devloo</i>
Application of torpedo piles as fixed points for offshore platform mooring systems A. M. da Costa, C. dos S. Amaral & C. de O. Cardoso
Current developments on ballistics in the Brazilian Navy Research Institute (IPqM) – a review on ballistics science A. de A. Motta, E. B. Becker & N. F. F. Ebecken
Response of soils and structures under impact loading using the discrete element method <i>J. D. Riera, I. Iturrioz & R. D. Rios</i>
Edge-based finite element for nonlinear solid mechanics and unsteady transport problems <i>A.L.G.A. Coutinho, J.L.D. Alves, M.A.D. Martins & D.A.F. de Souza</i>
Time-space adaptive large eddy simulation in arbitrary lagrangian-eulerian co-ordinates: application to fluid-structure interaction <i>P.A.B. De Sampaio, P.H. Hallak, A.L.G.A. Coutinho & M.S. Pfeil</i> 83

Simulators for ballistics - Part I The use of a RTOS for simulating ballistic phenomena J. V. Calvano
Simulators for ballistics - Part II On the use of JAVA as a paradigm for simulators <i>J. V. Calvano</i>
Shock-waves, composites, and geopolymers <i>C. Thaumaturgo</i>
On the repair of damaged columns of semi-submersible platforms M. A. Maddalena, T. A. Netto & J.C. R. Cyrino
Influence of variation of parameters in the flight of a fin-stabilized projectile A. L. T. Rezende & C. A. P. Sarzeto
Flow field computational analysis in a combustor of a solid fuel ramjet assisted projectile <i>H. Cordeiro & A. Nieckele</i>
A finite element model for dynamic fracturing of hard rocks by blasting A. D. R. Lima, C. Romanel & D. M. Roehl
Dynamic fracture toughness of alumina with niobia addition L.H.L. Louro, A.V. Gomes & C.R.C. Costa
Processing of alumina resistant to 7.62mm armour piercing C. V. Rocha, C. A. Costa & M. A. P. Santos
Evaluation of silicon nitride for ballistic armour applications C. V. Rocha & C. A. Costa
Changing of ballistic parameters from aged gun propellants W.P.C. de Klerk & C.A. van Driel
A survey in conservation laws and some applications W. Neves
Author index