

BOOKS/PERIODICALS REVIEWED



Hidraulica Maritima y De Estuarios (Marine and Estuary Hydraulics).

BY RICARDO V. PETRONI

Dunken Publishers, Buenos Aires, Argentina. 2005. In Spanish.

Ricardo V. Petroni is one of the most highly considered experts on hydraulic and civil engineering in South America. After graduating from the Universidad Nacional de La Plata, he studied a postgraduate course at Massachusetts Institute of Technology MIT (USA). His intensive professional activity in marine, port and coastal projects throughout South America, and the great many studies and papers he has published in the field of Hydraulic Engineering are proof of his international prestige in this field. In 2002, he was included in the international "Who's Who" in the fields of Science and Engineering, thereby corroborating his eminent technical and academic track record.

From his early youth, Professor Ricardo V. Petroni has been linked to the teaching sector, having been a lecturer at many universities in Argentina, and also Director of the Port Engineering School. His vocation as a teacher is patent in this new work, *Hidraulica Maritima y De Estuarios* (Marine and Estuary Hydraulics).

In addition to providing an extremely useful tool for all those who are interested in the hydraulics of seas, estuaries and coasts, this excellent technical compendium is written with the principal aim of offering a technical publication to all students of Hydrodynamic Engineering who wish to gain a full understanding of non-permanent movement in natural environments. The author's objective has been more than surpassed. Using a truly pedagogical approach, Professor Petroni starts each chapter of the book by giving a clear, concise explanation of the way in which the physical processes described in that chapter actually work. Following

this conceptual introduction, the author uses his solid, elegant mathematical training to carry out an accurate, prolific mathematical development of the physical phenomenon being discussed.

Thus, Chapter 1: General Observations shows us the framework based on which the subject matters of the following chapters will be developed, the titles of which are: Chapter 2: Seas and Oceans; Chapter 3: Hydrodynamics; Chapter 4: Introduction to wave dynamics; Chapter 5: Wave theory; Chapter 6: Resonance in ports; Chapter 7: Wind waves; Chapter 8: Advanced theory; Chapter 9: Tides; Chapter 10: Coastal, gulf and estuary tides.

Professor Petroni's contribution to coastal hydrodynamics and sediment transportation in the second half of the book deserves a special mention. The chapters on this subject reveal his technical training in the USA, as he often makes reference to the latest version of the Coastal Engineering Manual (2005, Coastal Engineering Research Center), a respected reference publication in today's field of engineering. This part of the book covers the following subjects: Chapter 11: Introduction to sediment transportation; Chapter 12: Coastal processes; Chapter 13: Introduction to estuary dynamics; Chapter 14: Coastal structures; Chapter 15: Introduction to the dispersion of contaminants.

Finally, in Chapter 16: Measuring techniques, Chapter 17: Sedimentation in navigable canals, and Chapter 18: Contamination on the Buenos Aires coast, the author provides a series of practical examples found in the River Plate (Rio de la Plata) and along the coast of Buenos Aires, together with a description and a mathematical check of the phenomena observed.

The book also includes a great many references, whose origin serve to corroborate Professor Petroni's training in the USA. However, there is a clear absence of European references in general and Spanish references in particular, including important contributions from this latter source published in Spanish within this Engineering speciality. That said, Ricardo V. Petroni has succeeded in including in one book the fundamental subjects that any Marine and Coastal Engineer should be aware of, in terms of both concepts and mathematics.

Not only is this book a highly useful tool for Spanish-speaking students of Marine and Coast Hydraulics, but also a book which should be on the desk of any Spanish-speaking hydraulic engineer, whether a consultant, a project manager or a builder. It is our hope that the book will soon be translated into English to ensure an even wider dissemination.

ROBERTO VIDAL