SPIS TREŚCI

No. 1

3 Editorial

RESEARCH PAPERS


29 Turbulence measurements in positive surges and bores / Christian Koch and Hubert Chanson

41 Application of the method of characteristics to the dam break wave problem / Hubert Chanson

50 A computational study of shear stress in smooth rectangular channels / Nicolas De Cacqueray, David M. Hargreaves and Hervé P. Morvan

58 Prediction of velocity profiles and Reynolds stress distributions in turbulent open-channel flows with adverse pressure gradient / Kouki Onitsuka, Juichiro Akiyama and Sadakatsu Matsuoka

66 Effect of Reynolds number, near-wall perturbation and turbulence on smooth open-channel flows / Bushra Afzal, Mdabdullah Al Faruque and Ram Balachandar

82 Effect of spacing of two offset jets on scouring phenomena / Dipa Dey and T.I. Eldho

90 Two-dimensional mixing of pollutants in streams with transverse line source / Sarbjit Singh, Zulfequar Ahmad and Umesh C. Kothyari

100 Closure problem to jet scour / Dr. IR. Gijs J.C.M. Hofmans

110 A semi-empirical model for clear-water scour evolution at bridge abutments / A. Melihyanmaz and Omer Kose

119 Scour protection of circular bridge piers with collars and slots / A.T. Moncada-M, J. Aguirre-Pe, J.C. Bolívar and E.J. Flores

127 Computation of shallow wakes with the fractional step finite element method / Chunbo Jiang, Chenyang and Dongfang Liang

TECHNICAL NOTES

137 Pressures and discharges during operation of a lock valve, physical and numerical model results / Jens M. Scheffermann and Richard L. Stockstill

142 Minimum pump submergence to prevent surface vortex formation / David Werth and Carl Frizzell
RESEARCH PAPERS
147 Application of Godunov-type schemes to transient mixed flows / Arturo S. León, Mohamed S. Ghidaoui, Arthur R. Schmidt, Marcelo H. García
157 One-dimensional channel flow equations with curvature revisited / Oscar Castro-Orgaz and Subhasish Dey
167 Experimental and numerical modeling of a sluice gate flow / Mevlut Sami Aköz, Mehmet Salih Kirkgöz and Ahmet Alper Oner
177 Velocity distribution and wake-law in gradually decelerating flows / Shu-Qingyang
185 Hydraulics of developing chute flow / Oscar Castro-Orgaz
195 Numerical simulation of flushing effect on sewer sediments and comparison of four sediment transport formulas / Enrico Creaco and Jean-Luc Bertrand-Krajewski
203 A three-dimensional distinct element model for bed-load transport / Abbas Yeganeh-Bakhtiary, Behnam Shabani and Hitoshi Gotoh
213 The formation of tidal sand waves: steady versus unsteady approaches / P. Blondeaux and G. Vittori
223 Artificial neural network for bedload estimation in alluvial rivers / Mustafa Sasal, Shalini Kashyap, Colin D. Rennie and Ioan Nistor
233 Leak-edge detection / Marco Ferrante, Bruno Brunone, Silvia Meniconi
242 Critical submergence for dual pipe intakes / Nevzat Yildirim, Kerem Taştan and Muammer Mustafa Arslan
250 Local scour at a trapezoidal abutment: sediment motion pattern / Alessio Radice, Francesco Ballio and Giovanni Porta
263 Round turbulent buoyant jets discharged vertically upwards forming a regular polygon / Aristeidis A. Bloutsos and Panayotis C. Yannopoulos
275 Experimental study of turbulent flow near model trashracks / Jonathan Mawuli Tsikata, Chris Katopodis and Mark Francis Tachie

DISCUSSIONS
281 On inducing equations for vegetation resistance
283 Turbulence and cavity recirculation in air–water skimming flows
285 Similitude and scale effects of air entrainment in hydraulic jumps

BOOK REVIEW
288 The failure of embankment dams due to overtopping
No. 3

RESEARCH PAPERS

291 Large eddy simulation of sediment transport in open-channel flow / Patryk Widera, Erik Toorman and Chris Lacor

299 Semi-implicit modeling of 2D rapidly varied flows with transitions / Andrea Balzano and Elisabetta Torricelli

311 Leak detection in pipelines by inverse backward transient analysis / Hamid Shamloo and Ali Haghighi

319 Stream power criterion and design of sand bed channels at incipient motion / Achanta Ramakrishna Rao and Gopu Sreenivasulu

329 How fast and how far do variable boundary conditions affect river morphodynamics? / Giacomo Fasolato, Paolo Ronco and Giampaolo Di Silvio

340 Sediment management by jets and turbidity currents with application to a reservoir for flood and pollution control in Chicago, Illinois / Octavio E. Sequeiros, Mariano I. Cantero and Marcelo H. Garcia

349 Experimental and numerical investigations of dike-break induced flows / Sebastian Roger, Benjamin J. Dewals, Sebastien Erpicum, Dirk Schwanenberg, Holger Schüttrumpf, Jürgen Köngeter and Michel Pirotton

360 Bed erosion in steep open channels / Roman B. Weichert, Gian Reto Bezzola and Hans-Erwin Minor

372 A reliability-based assessment of bridge pier scour in non-uniform sediments / Mohammad Muzzammil and Nadeem A. Siddiqui

DISCUSSIONS

381 Experimental analysis of the impact of dry avalanches on structure and implication for debris flows

384 Direct measurement of vegetation resistance in prototype scale

387 Steady flow regime for free overfall spillways: Influence of the ascending branch of the spillway crest

390 Prediction of alluvial river bed variation by SDAR model

392 A Boussinesq-type model for flow over trapezoidal profile weirs

396 Gradually expanding hydraulic jump in a trapezoidal channel

BOOK REVIEW

399 The Rock Manual: The use of rock in hydraulic engineering (2nd ed.)
Thermodynamic analysis of stream flow hydrodynamics / W.G. Gray and M.S. Ghidaoui

Analytical models for velocity distributions in open channel flows / Xiaonan Tang and Donald W. Knight

Unsteady turbulent pipe flow due to water hammer using k-ω turbulence model / Alireza Riasì, Ahmad Nourbakhsh and Mehrdad Raisee

Friction coefficient for oscillatory flow: the rough-smooth turbulent transition / Francisco Pedocchi and Marcelo H. Garcia

Impact of stem flexibility on mean flow and turbulence structure in depth-limited open channel flows with submerged vegetation / Wonjun Yang and Sung-Uk Choi

Non-dimensional parameters of depth-averaged gravity flow models / Heqing Huang, Jasim Imran and Carlos Pirmez

Deflector-generated jets / Michael Pfister, Willi H. Hager

Modeling of non-breaking and breaking solitary wave run-up using FORCE-MUSCL scheme / Ali Mahdavi and Nasser Talebbeydokhti

Free-surface stretching-sustained intake vortices / Rupp Carriveau, Gregory A. Kopp and Raouf E. Baddour

Settling behavior of fine-grained materials in flocs / Jong-Woo Kim and Franz Nestmann

Scour and hydraulic jump downstream of block ramps in expanding stilling basins / Stefano Pagliara, Michele Palermo and Iacopo Carnacina

Overland flow and pathway analysis for modelling of urban pluvial flooding / Čedo Maksimović, Dušan Prodanović, Surajate Boonya-Aronnet, João P Leitão, Slobodan Djordjević and Richard Allitt

TECHNICAL NOTES

Lauber and Hager’s dam-break wave data for numerical model validation / Lai Wai Tan and Vincent H. Chu

Transition of turbulent pipe flow / Achanta Ramakrishna Rao and Bimlesh Kumar

DISCUSSIONS

524 A note on Chow’s description of the weak hydraulic jump
529 Exact equations for pipe-flow problems

PAPER PRINTED IN ASSOCIATED JOURNALS

539 Papers printed in associated journals
<table>
<thead>
<tr>
<th>Page</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>President's New Year Message</td>
</tr>
<tr>
<td>6</td>
<td>HYDRALAB continued</td>
</tr>
<tr>
<td>8</td>
<td>Innovative Approaches in Urban Flood Management in Hong Kong</td>
</tr>
<tr>
<td>11</td>
<td>3rd IAHR International Groundwater Symposium</td>
</tr>
<tr>
<td>12</td>
<td>International School of Hydraulics</td>
</tr>
<tr>
<td>13</td>
<td>XXIII IAHR Latin America Congress</td>
</tr>
<tr>
<td>14</td>
<td>A First for the Pacific - Come and Join Us?</td>
</tr>
<tr>
<td>15</td>
<td>People &amp; Places</td>
</tr>
</tbody>
</table>
No. 2

20 Marine Renewable Energy Research in ICIT, Orkney, Scotland
21 The Severn Barrage: Europe's Largest Proposed Marine Renewable Energy Project
23 Renewable Energy: Special seminar in Vancouver and new IAHR Working Group
24 Avalanches and landslides induced by the Wenchuan Earthquake [part 1]
26 News from IAHR Sichuan Student Chapter
27 The Mystery of Minoan Tapered Pipes
30 IV International Symposium on Transboundary Waters Management
31 People & Places
<table>
<thead>
<tr>
<th>No.</th>
<th>Event/Conference/Article</th>
</tr>
</thead>
<tbody>
<tr>
<td>36</td>
<td>IAHR Council Election 2009-2011</td>
</tr>
<tr>
<td>42</td>
<td>IAHR - Towards a New Era</td>
</tr>
<tr>
<td>46</td>
<td>Journal of Hydraulic Research</td>
</tr>
<tr>
<td>47</td>
<td>Hydroinformatics Conference Tianjin, China</td>
</tr>
<tr>
<td>47</td>
<td>1st IAHR European Regional Division Congress, Edinburgh</td>
</tr>
</tbody>
</table>
52 Developments in Instrumentation
54 acqua alta 2009 in Hamburg
56 IAHR Applied Hydrology
57 Conference report
59 Congress News
60 Management of quake lakes created by the Wenchuan Earthquake [part 2]
63 People & Places