

## **CURRICULUM VITAE**

### **Duan, Huan-Feng**

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### **Personal Information**

- Full Name: DUAN, HUAN-FENG
- Citizenship: Hong Kong SAR, P.R. China



### **Education Background**

- PhD in Civil Engineering (Hydraulics & Water Resources), 2011  
*PhD Research Excellence Award*, The Hong Kong University of Science and Technology (HKUST), Hong Kong (Thesis Supervisors: Prof. MS Ghidaoui; Prof. YK Tung)
- BEng: Major in Civil Engineering (Hydraulics); Minor in Computer Science; 2003; *First-class Honor Award*, MPhil in Civil Engineering (Hydraulics & Water Resources) 2006; *Outstanding Graduate Award*, Tongji University (TJU), Shanghai, China

### **Fields of Interests**

- Primary: (1) Hydraulics and Fluid Mechanics (transients; waterhammer modeling and analysis, defects detection in pipelines; Open channel flow dynamics; Turbulence); (2) Water resources management and engineering (water quality assessment; water resources system design and optimization; flooding control and forecasting); (3) Computational fluid dynamics (CFD) (mathematical modeling and analysis; numerical simulation)
- Secondary: Program design and development (in languages of C, C++, C#, VB, FORTRAN, Matlab, etc.)

### **Academic & Working Experience**

- *Associate Professor*: July 2019 – present  
Department of Civil and Environmental Engineering, HK PolyU:
- *Assistant Professor*: Nov. 2013 – June 2019  
Department of Civil and Environmental Engineering, HK PolyU:
- *Postdoctoral Research Associate*: Mar. 2011 – Nov. 2013;  
Department of Civil and Environmental Engineering, HKUST, Hong Kong
- *Visiting Scholar*: Mar. 2013 – April 2013;  
Academic Visiting Dr. Pedro J Lee, at Department of Civil and Natural Resources Engineering, University of Canterbury, New Zealand

- *Hydraulic Engineer and Software Engineer*: Jan. 2006 – Jan. 2007; Shanghai Shenchuang Information Technology Inc., Shanghai China

### **Teaching Experience**

- Lecturer: Dept. of Civil and Environmental Engineering, HK PolyU:
  - Fluid Mechanics: (for Higher Diploma Degree)
  - Fluid Mechanics for Civil Engineers (for BEng Degree)
  - Hydraulics and Hydrology
- Assisting Lecturer:
  - Tongji University, Shanghai, China: Matlab Program Design and Application in Water Engineering, *Summer 2004*
  - Dept of Civil and Environmental Engineering, The Hong Kong University of Science and Technology: Waves in Hydrosystems, *Spring 2011*
- Teaching Assistant: Department of Civil and Environmental Engineering, The Hong Kong University of Science and Technology
  - Hydraulics (CIVL252), *Spring 2007/2008*
  - Hydrology (CIVL253), *Fall 2007/2008*
  - Waves in Hydrosystems (CIVL354), *Fall 2009*

### **Teaching Project**

- **PI**: “Interactive Visualization Tool Based Enhancement for Learning and Teaching in Fluid Mechanics for Civil Engineering,” Teaching Development Grant (TDG) - University Grants Committee (UGC) 2019-2022 Funding, Project, no. LTG19-22/SS/CEE2, the Learning and Teaching Committee (LTC), HK PolyU, 2020-2021

### **Statistics of Achievement:** (*Data available at **June 2020***)

- Total Referred Publications: **110** with:
  - **77** Journal Articles (**64** SCI-Indexed Papers)
  - **33** Conference Papers (Oral Presentations and Proceedings)
- Citation Report:  
([Scopus-ID: 57200804773](#); [ORCID: 0000-0002-9200-904X](#); [Research-ID: A-1369-2014](#))
 

	(a) Google Scholar;	(b) Scopus;	(c) Web of Science
➤ <u>h-index</u> :	<b>20</b>	<b>19</b>	<b>17</b>
➤ <u>Total citations</u> :	<b>&gt;1300</b>	<b>&gt;980</b>	<b>&gt;930</b>

### **Student Supervision**

- Current PhD/MPhil Students:
  - (1) As chief-supervisor: **7** PhD Students (2 Graduated); and **3** Master Students (2 Graduated)
  - (2) As co-supervisor: **3** PhD Students

### **Awards & Honors & Recognitions**

- **Outstanding Reviewer Award**, IOP Journal of Measurement Science and Technology, 2017

- **Post-Doctoral Funding (PDF)**, The Hong Kong University of Science and Technology, 2012
- **PhD Research Excellence Award**, The Hong Kong University of Science and Technology, 2011
- **Associate Editor**, *Engineering Applications of Computational Fluid Mechanics (SCI Journal, IF 2019 = 5.800, Top 5% in JCR List)*
- **Associate Editor**, *IWA Journal of Water Supply: Research and Technology – AQUA (SCI Journal, IF 2019 = 1.319)*
- **Finalist** to the **J.F.K.** Best Student Paper Competition on the 33<sup>rd</sup> IAHR Congress, Vancouver, Canada, 2009
- **Excellent Paper Award** from the Association of Science and Technology of China, 2007
- Outstanding College Graduate of Shanghai (Top 1% in Shanghai City), China, 2006

### **Research Project & Consultancy Experience**

(1) As Principle Investigator (PI/PC or Co-PI):

- **PI**: “Research on urban flash floods under smart city development and climate change”, FCE Projects of Strategic Importance Stage-1 Seed Funding for RGC-CRF Project, FCE, HK PolyU, 2021~2022.
- **Co-PI**: “Transformative tropical storm risk mitigation of high-rise building clusters in coastal cities through understanding urban aerodynamics mechanism”, FCE Projects of Strategic Importance Stage-2 Seed Funding for RGC-TRS Project (Full Proposal), FCE, HK PolyU, 2021~2025.
- **PI**: “Development of a holistic transient-based method for characterizing and diagnosing of different pipe anomalies in urban water supply pipeline systems”, **GRF, RGC-HK**, 2020~2023.
- **PI**: “On the transient wave behaviors in viscoelastic pipelines in urban water supply systems”, **GRF, RGC-HK**, 2018~2020.
- **PI**: “Investigation of Transient Water-Air Flows in Drainage Pipelines”, **ECS, RGC-HK**, 2017~2019.
- **PI** of Sub-Project: “Transient-Based Blockage Detection in Complex Water Pipeline Systems” under the Theme-based Research Scheme (TBRS) of “Smart Urban Water Supply Systems (Smart UWSS)”, **TBRS, RGC-HK**, 2016-2020.
- **PI**: “Developing Sustainable Urban Water Infrastructure System for Effective Utilization of Water Resources”, Incentive Research Fund (IRF) for Joint Research Project with Potential Member of Asian Universities Cluster - Centre of Excellence in Civil Engineering (CE2), CEE, HK PolyU, 2016-2018.
- **PI**: “Stochastic Modeling and Analysis of Unsteady Open Channel Flows in Complex Mountain River Networks”, Open Funding of the State Key Laboratory of Hydraulics and Mountain River Engineering, Sichuan University, China, 2015-2017.
- **PI**: “Transient-Based Partial Blockage Detection in Branched Pipe Systems”, Block Grant, FCE, HK PolyU, 2014-2019.

- **PI:** “On the Influence of Pipe Blockages on Transient Pressure Waves in Water Supply Pipelines”, Central Research Grant, HK PolyU, 2015-2016.
- **PI:** “Characterizing Heavy Metals Release and Stability in Urban Water Distribution Systems”, Central Research Grant, CEE, HK PolyU, 2014-2015.

(2) As Co-Investigator (Co-I) or Participant:

- “Smart Utilities -- Development of a Strategic Focus Area (SFA) in Utility System Research”, SFA Research Scheme, RISUD, HK PolyU, 2018~2020.
- “Very Large Floating Structures -- High-Performance Materials and Structural Elements for Sustainable Floating Structures”, SFA Research Scheme, RISUD, HK PolyU, 2018~2020.
- “On detection of multiple leaks in water distribution pipelines,” RGC-HK Scheme for 2013/2014.
- “On blockage detection in pressurized pipelines,” RGC-HK Scheme for 2012/2013.
- “On wave-defect interaction in pressurized conduit flows,” RGC-HK Scheme for 2011/2012.
- “Uncertainty Analysis and Sensitivity Analysis on the MIKE11 Models for Shenzhen River and New Territories Basins,” DSD, Hong Kong, 2007-2008. (PI: Prof. YK Tung)
- “Software Development of On-line Hydraulic Simulation and Optimal Reservoir Scheduling for Water Supply System in Zhaoqing City,” Guangdong Province, China, 2005-2006. (PI: Prof. GP Yu)
- “Hydraulic Design and Planning of Portable Water System in Guangzhou City,” Guangdong Province, China, 2005. (PI: Prof. GP Yu)
- “Hydraulic Calibration and Identification of Water Supply System for Guangzhou Economic Development Zone,” Guangdong Province, China, 2004-2005. (PI: Prof. GP Yu)
- “Hydraulic Design and Analysis of Drainage Main System in Zhuji City,” Zhejiang Province, China, 2003-2004. (PI: Prof. GP Yu)

### **Professional Affiliations & Activities**

- **Member** of the International Association of Hydro-Environmental Engineering and Research (IAHR)
- **Executive Committee** Member of IAHR – Hong Kong Chapters
- Deputy Programme Leader, *Higher Diploma in Civil Engineering*, HK PolyU
- Unit Leader in Hydraulics, CEE Department, HK PolyU
- **Associate Editor**, *Engineering Applications of Computational Fluid Mechanics (SCI Journal, IF 2019 = 5.800, Top 5% in JCR List)*
- **Associate Editor**, *IWA Journal of Water Supply: Research and Technology – AQUA (SCI Journal, IF 2019 = 1.319)*
- Member of the American Society of Civil Engineers (ASCE)
- Member of Hong Kong Institute of Science (HKIS)

- Organizing Committee for the 2<sup>nd</sup> CCWI/WDSA Conference, Beijing, China, September 2021
- Scientific Committee for the International Conference of Computing and Control for the Water Industry 2013 (CCWI2013)
- Session Chairman: *The 37<sup>th</sup> IAHR World Congress*, 13-18 August, 2017, KL, Malaysia.
- Session Chairman, *The 20<sup>th</sup> IAHR-APD Congress*, 28-31 August, 2016, Colombo, Sri Lanka.
- Session Chairman, *The 12<sup>th</sup> International Conference of Hydroinformatics*, 21-26 August, 2016, Inchon, South Korea.
- Peer-Review Service for Professional Journals: Over 30 Journals in the field of Hydraulics and Water Resources (ASCE, IAHR, ASME, IWA, etc.)

## **Publication List**

### **(A) Referred Journal Papers:**

(Note: Supervised/Co-supervised student/staff is underlined; Corresponding author is with “\*”)

- (1) Pan, B., **Duan, H.F.\***, Meniconi, S., and Brunone, B. (2021). “FRF-based transient wave analysis for the viscoelastic parameters identification and leak detection in water-filled plastic pipes.” *Mechanical Systems and Signal Processing* (MSSP), 146, 107056.
- (2) Alexander, J.\*, Li, Z., Lee, P.J., Davidson, M., and **Duan, H.F.** (2020). “Experimental investigation of the effects of air pocket configuration on fluid transients in a pipeline.” *Journal of Hydraulic Engineering – ASCE*, Accepted and in press.
- (3) **Duan, H.F.\*** (2020). “Development of a TFR-based method for the simultaneous detection of leakage and partial blockage in water supply pipelines.” *Journal of Hydraulic Engineering – ASCE*, 146(7), 04020051. DOI: 10.1061/(ASCE)HY.1943-7900.0001764.
- (4) Yang, H., **Duan, H.F.**, and Zhu, J.B.\* (2020). “Effects of filling fluid type and composition and joint orientation on acoustic wave propagation across individual fluid-filled rock joints.” *International Journal of Rock Mechanics and Mining Sciences*, 128(4), 104248. DOI: 10.1016/j.ijrmms.2020.104248.
- (5) Liu, T.H., Wang, Y.K., Wang, X.K., **Duan, H.F.**, and Yan, X.F.\* (2020). “Morphological environment survey and hydrodynamic modeling of a large bifurcation-confluence complex in Yangtze River, China”, *Science of The Total Environment*, 737, 139705.
- (6) Chen, L., Huang, K.D.\*, Zhou, J.Z., **Duan, H.F.**, Zhang, J.H., Wang, D.W., and Qiu, H.Y. (2020). "Multiple-risk assessment of water supply, hydropower and environment nexus in the water resources system", *Journal of Cleaner Production*, 268, 122057.
- (7) Huang, Y., Zheng, F.F.\*, **Duan, H.F.**, Zhang, Q.Z., and Shen, Y.G. (2020). “Impacts of nodal demand allocations on transient-based skeletonization of water distribution systems”, *Journal of Hydraulic Engineering – ASCE*, 146(9), 04020058.
- (8) Urbanowicz, K.\*, **Duan, H.F.**, and Bergant, A. (2020). “Transient flow of liquid in plastic pipes.” *Strojniški vestnik- Journal of Mechanical Engineering*, 66(2), 77-90.
- (9) Huang, Y., Zheng, F.F.\*, **Duan, H.F.**, and Zhang, Q.Z. (2020). “Multi-objective optimal design of water distribution networks accounting for transient impacts”, *Water Resources Management*, 34(4), 1517-1534. DOI: 10.1007/s11269-020-02517-4.

- (10) Huang, Y., Zheng, F.F.\*, **Duan, H.F.**, and Zhang, Q.Z. (2020). "Closure to 'skeletonizing pipes in series within urban water distribution systems using a transient-based method' by Huang et al. 2019", *Journal of Hydraulic Engineering – ASCE*, 146(4), 07020004.
- (11) Pan, B., **Duan, H.F.\***, Meniconi, S., Urbanowicz, K., Che, T.C., and Brunone, B. (2019). "Multistage frequency-domain transient-based method for the analysis of viscoelastic parameters of plastic pipes." *Journal of Hydraulic Engineering – ASCE*, 146(3), 04019068. DOI: 10.1061/(ASCE)HY.1943-7900.0001700.
- (12) Alexander, J.\*, Lee, P.J., Davidson, M., Li, Z., Murch, R., **Duan, H.F.**, Meniconi, S., and Brunone, B. (2019). "Experimental investigation of the interaction of fluid transients with an in-line air pocket." *Journal of Hydraulic Engineering – ASCE*, 146(3), 04019067.
- (13) **Duan, H.F.\***, and Gao, X.C. (2019). "Flooding control and hydro-energy assessment for urban stormwater drainage systems under climate change: Framework development and case study." *Water Resources Management*, 33(10), 3523-3545.
- (14) Wang, X.K.\*, Yan, X.F., **Duan, H.F.**, Liu, X.N., and Huang, E. (2019). "Experimental study on influence of river flow confluences to the open channel stage-discharge relation", *Hydrological Sciences Journal*, 64(16), 2025-2039.
- (15) Urbanowicz, K.\*, Bergant, A., and **Duan, H.F.** (2019). "Simulation of unsteady flow with cavitation in plastic pipes using the discrete bubble cavity and Adamkowski models." *IOP Conference Series: Materials Science and Engineering*, 710(2019), 012013.
- (16) Urbanowicz, K.\*, Bergant, A., **Duan, H.F.**, Stosiak, M, and Firkowski, M. (2019). "Using DGCM to predict transient flow in plastic pipe." *IOP Conference Series: Earth and Environmental Science*, 405(2019), 012020.
- (17) Alexander, J.\*, Lee, P.J., Davidson, M., **Duan, H.F.**, Li, Z., Murch, R., Meniconi, S., and Brunone, B. (2019). "Experimental validation of existing numerical models for the interaction of fluid transients with in-line air pockets." *Journal of Fluids Engineering – ASME*, 141(12), 121101, DOI: 10.1115/1.4043776.
- (18) Li, F., Yan, X.F., and **Duan, H.F.\*** (2019). "Sustainable design of urban stormwater drainage systems by implementing detention tank and LID measures for flooding risk control and water quality management", *Water Resources Management*, 33(9), 3271-3288.
- (19) Yang, H., **Duan, H.F.**, and Zhu, J.B.\* (2019). "Ultrasonic P-wave propagation through water-filled rock joint: An experimental investigation." *Journal of Applied Geophysics*, 169(2019), 1-14. DOI:10.1016/j.jappgeo.2019.06.014.
- (20) Firkowski, M.\*, Urbanowicz, K., and **Duan, H.F.** (2019). "Simulation of unsteady flow in viscoelastic pipes." *Springer Nature: Applied Sciences*, 1(6), 519.
- (21) Che, T.C., **Duan, H.F.\***, Pan, B., Lee, P.J., and Ghidaoui, M.S. (2019). "Energy analysis of the resonant frequency shift pattern induced by non-uniform blockages in pressurized water pipes." *Journal of Hydraulic Engineering – ASCE*, 145(7), 04019027.
- (22) Huang, Y., Zheng, F.F.\*, **Duan, H.F.**, Zhang, T.Q., Guo, X.L. and Zhang, Q.Z. (2019). "Skeletonizing pipes in series within urban water distribution systems using a transient-based method", *Journal of Hydraulic Engineering – ASCE*, 145(2), 04018084.
- (23) Q.Z. Zhang, F.F. Zheng\*, **H.F. Duan**, Y.Y. Jia, T.Q. Zhang and X.L. Guo. (2018). "An efficient numerical approach for simultaneous calibration of pipe roughness coefficients and nodal demands for water distribution systems", *Journal of Water Resources*

**Planning & Management – ASCE**, DOI:10.1061/(ASCE)WR.1943-5452.0000986.

- (24) **T.C. Che**, **H.F. Duan\***, P.J. Lee, **B. Pan** and M.S. Ghidaoui. (2018). "Transient frequency responses for pressurized water pipelines containing blockages with linearly varying diameters." *Journal of Hydraulic Engineering – ASCE*, DOI:10.1061/(ASCE)HY.1943-7900.0001499.
- (25) **T.C. Che**, **H.F. Duan\***, P.J. Lee, S. Meniconi, **B. Pan** and B Brunone. (2018). "Radial pressure wave behavior in transient laminar pipe flows under different flow perturbations." *Journal of Fluids Engineering – ASME*, (online version) doi:10.1115/1.4039711.
- (26) **H.F. Duan\***, **T.C. Che**, P.J. Lee and M.S. Ghidaoui. (2018). "Influence of nonlinear turbulent friction on the system frequency response in transient pipe flow modelling and analysis." *Journal of Hydraulic Research – IAHR*, DOI:10.1080/00221686.2017.1399936.
- (27) **Y. Zhu**, **H.F. Duan**, **F. Li**, C.G. Wu\*, Y.X. Yuan and Z.F. Shi. (2018). "Experimental and numerical study on transient air-water mixing flows in viscoelastic pipes." *Journal of Hydraulic Research – IAHR*, in press, DOI:10.1080/00221686.2018.1424045.
- (28) **H.F. Duan\***. (2018). "Accuracy and sensitivity evaluation of TFR method for leak detection in multiple-pipeline water supply systems." *Water Resources Management*, 32(6), 2247-2264.
- (29) M. Zhao\*, M.S. Ghidaoui, M. Louati and **H.F. Duan**. (2018). "Numerical study of the blockage length effect on the transient wave in pipe flows." *Journal of Hydraulics Research – IAHR*, 56(2), 245-255.
- (30) **H.F. Duan\***, P.J. Lee, **T.C. Che**, M.S. Ghidaoui, B.W. Karney and A.A. Kolyshkin (2017). "The influence of non-uniform blockages to the transient wave behaviors and extended blockage detection in pressurized water pipelines." *Journal of Hydro-Environmental Research*, 17, 1-7.
- (31) **H.F. Duan\***. (2017). "Transient wave scattering and its influence on transient analysis and leak detection in urban water supply systems: theoretical analysis and numerical validation." *Water – MDPI*, 9(10), 789.
- (32) **H.F. Duan\***. (2017). "Transient flow analysis and utilization in urban water supply systems." (a mini review article) *Civil Engineering Research Journal*, 2(1), 555576.
- (33) **Y. Huang**, **H.F. Duan**, M. Zhao\*, Q. Zhang, H.B. Zhao, and K. Zhang. (2017). "Probabilistic analysis and evaluation of nodal demand effect on transient analysis in urban water distribution systems", *Journal of Water Resources Planning & Management - ASCE*, 143(8), DOI: 10.1061/(ASCE)WR.1943-5452.0000797.
- (34) **Y. Huang**, **H.F. Duan\***, M. Zhao, Q. Zhang, H.B. Zhao, and K. Zhang. (2017). "Transient influence zone based decomposition of water distribution networks for efficient transient analysis", *Water Resources Management*, DOI: 10.1007/s11269-017-1621-x, 31(6), 1915-1929.
- (35) **H.F. Duan\***, S. Meniconi, P.J. Lee, B. Brunone, and M.S. Ghidaoui. (2017). "Local and integral energy based evaluation for the unsteady friction relevance in transient pipe flows." *Journal of Hydraulic Engineering – ASCE*, 143(7), 04017015.
- (36) **H.F. Duan\***. (2017). "Transient frequency response based leak detection in water supply pipeline systems with branched and looped junctions." *Journal of Hydroinformatics – IWA*, 19(1), 17-30.

- (37) **T.C. Che\***, and **H.F. Duan** (2016). “Evaluation of plane wave assumption in transient laminar pipe flow modeling and utilization.” *Procedia Engineering*, 154(c), 959-966.
- (38) **J.L. Sun\***, R. Wang, and **H.F. Duan**. (2016). “Multiple-fault detection in water pipelines using transient time-frequency analysis.” *Journal of Hydroinformatics – IWA*, 18(6), 975-989, DOI: 10.2166/hydro.2016.232.
- (39) **H.F. Duan\***, **F. Li**, and **H.X. Yan**. (2016). “Multi-objective optimal design of detention tanks in the urban stormwater drainage system: LID implementation and analysis.” *Water Resources Management*, 30(13), 4635-4648.
- (40) **H.F. Duan\***, **F. Li**, and T. Tao (2016). “Multi-objective optimal design of detention tanks in the urban stormwater drainage system: uncertainty and sensitivity analysis.” *Water Resources Management*, 30(7), 2213-2226.
- (41) **H.F. Duan\***, (2016). “Sensitivity analysis of transient-based frequency domain method for extended blockage detection in water pipeline systems.” *Journal of Water Resources Planning and Management – ASCE*, 142(4), 04015073.
- (42) **H.F. Duan\***, and P.J. Lee. (2016). “Transient-based frequency domain method for dead-end side branch detection in water pipe systems.” *Journal of Hydraulic Engineering – ASCE*, DOI: 10.1061/(ASCE)HY.1943-7900.0001070, 04015042.
- (43) **H.F. Duan\***. (2015). “Uncertainty analysis of transient flow modeling and transient-based leak detection in elastic water pipelines.” *Water Resources Management*, 29(14): 5413-5427.
- (44) **F. Li**, **H.F. Duan\***, **H.X. Yan**, and T. Tao. (2015). “Multi-objective optimal design of detention tanks in the urban stormwater drainage system: framework development and case study.” *Water Resources Management*, 29(7), 2125-2137.
- (45) P.J. Lee, **H.F. Duan\***, J. Tuck, and M.S. Ghidaoui. (2015). “Numerical and experimental study on the effect of signal bandwidth on pipe assessment using transients.” *Journal of Hydraulic Engineering – ASCE*, 141(2), 04014074(10).
- (46) **H.F. Duan\***, PJ Lee, and J Tuck, (2014). “Experimental investigation of wave scattering effect of pipe blockages on transient analysis”, *Procedia Engineering*, 89(2014), 1314-1320.
- (47) **H.F. Duan\***, PJ Lee, and MS Ghidaoui, (2014). “Transient wave-blockage Interaction in pressurized water pipelines”, *Procedia Engineering*, 70(2014), 573-582.
- (48) S. Meniconi, **H.F. Duan\***, B. Brunone, M.S. Ghidaoui, P.J. Lee, and M. Ferrante (2014). “Further developments in the rapidly decelerating turbulent pipe flow modeling”, *Journal of Hydraulic Engineering – ASCE*, March 2014, 04014028(9).
- (49) **H.F. Duan\***, P.J. Lee, M.S. Ghidaoui, and J. Tuck, (2014). “Transient wave-blockage interaction and extended blockage detection in pressurized pipelines”, *Journal of Fluids and Structures*, 46(2014), 2-16.
- (50) S. Meniconi, **H.F. Duan**, P.J. Lee, B. Brunone\*, M.S. Ghidaoui, and M. Ferrante (2013). “Experimental investigation of coupled frequency- and time-domain transient test-based techniques for partial blockage detection in pipelines”, *Journal of Hydraulic Engineering – ASCE*, 139(10), 1033-1040.
- (51) **H.F. Duan\***, P.J. Lee, A. Kashima, J.L. Lu, M.S. Ghidaoui and Y.K. Tung, (2013). “Extended blockage detection in pipes using the system frequency response: analytical analysis and experimental verification”, *Journal of Hydraulic Engineering – ASCE*, 139(7), 763-771.



- (52) P.J. Lee\*, **H.F. Duan**, J.P. Vřkovskŷ, A. Zecchin, and M.S. Ghidaoui, (2013). “The effect of time-frequency discretization on the accuracy of the transmission line modeling of fluid transients”, *Journal of Hydraulics Research – IAHR*, 51(3), 273-283.
- (53) P.J. Lee\*, **H.F. Duan**, and M.S. Ghidaoui, (2013). “Frequency domain analysis of pipe fluid transient behaviors”, *Journal of Hydraulics Research – IAHR*, 51(6), 609-622.
- (54) **H.F. Duan\***, P.J. Lee, M.S. Ghidaoui, and Y.K. Tung, (2012). “System response function based leak detection in viscoelastic pipelines”, *Journal of Hydraulic Engineering – ASCE*, 138(2), 143-153
- (55) **H.F. Duan\***, P.J. Lee, M.S. Ghidaoui, and Y.K. Tung, (2012). “Extended blockage detection in pipelines by using frequency response method”, *Journal of Water Resources Planning and Management – ASCE*, 138(1), 55-62
- (56) **H.F. Duan\***, M.S. Ghidaoui, P.J. Lee, and Y.K. Tung, (2012). “On the relevance of unsteady friction with pipe size and length in pipe fluid transients”, *Journal of Hydraulic Engineering – ASCE*, 138(2), 154-166
- (57) **H.F. Duan\***, M.S. Ghidaoui, P.J. Lee, and Y.K. Tung, (2011). Closure to the discussions on “Unsteady friction and viscoelasticity in pipe fluid transients”, *Journal of Hydraulic Research – IAHR*, 49(3), 398-403
- (58) **H.F. Duan\***, P.J. Lee, M.S. Ghidaoui, and Y.K. Tung, (2011). “Leak detection in complex series pipelines by using frequency response method”, *Journal of Hydraulic Research – IAHR*, 49(2), 213-221.
- (59) **H.F. Duan\***, and G.P. Yu, (2010). “A Spanning-tree Based Algorithm for Hydraulic Simulation of Large-scale Water Supply Networks”, *Water Science and Engineering*, 3(1), 23-35.
- (60) **H.F. Duan\***, P.J. Lee, M.S. Ghidaoui, and Y.K. Tung, (2010). “Essential system response information for transient-based leak detection methods”, *Journal of Hydraulic Research – IAHR*, 48(5), 650-657.
- (61) **H.F. Duan\***, M.S. Ghidaoui, P.J. Lee, and Y.K. Tung, (2010). “Unsteady friction and viscoelasticity in pipe fluid transients”, *Journal of Hydraulic Research – IAHR*, 48(3), 354-362.
- (62) **H.F. Duan\***, Y.K. Tung, and M.S. Ghidaoui, (2010). “Probabilistic analysis of transient design for water supply systems”, *Journal of Water Resources Planning and Management – ASCE*, 136(6), 678-687.
- (63) **H.F. Duan\***. (2010). Discussion of “Analysis of PVC pipe-Wall viscoelasticity during water hammer”, *Journal of Hydraulic Engineering – ASCE*, 136(8), 547-550
- (64) **H.F. Duan\***, M.S. Ghidaoui, and Y.K. Tung, (2010). “Energy analysis of viscoelasticity effect in pipe fluid transients”, *Journal of Applied Mechanics – ASME*, 77(4), 044503.
- (65) **H.F. Duan\***. (2009). Discussion to “A turbulent approach to unsteady friction”, *Journal of Hydraulic Research - IAHR*, 47(6), 824-829
- (66) **H.F. Duan\***, M.S. Ghidaoui, and Y.K. Tung, (2009). “An efficient quasi-2D simulation of waterhammer in complex pipe systems”, *Journal of Fluids Engineering – ASME*, 131(8), 081105 (8).

**(B) Referred Conference Papers:**

(Note: Supervised student is underlined, and Corresponding author is with “\*”)

- (67) Urbanowicz, K.\*, Bergant, A., **Duan, H.F.**, and Firkowski, M. (2019). Simulation of unsteady flow with cavitation in plastic pipes using discrete bubble cavity and the Adamkowski model. The 38th IAHR World Congress, 1-6 September 2019, Panama City, Panama.
- (68) Pan, B., **Duan, H.F.\***, Che, T.C., Lee, P.J., Meniconi, S., and Brunone, B. (2019). Understanding effect of arterial viscoelasticity on blood hammer using multi-scale perturbation analysis. The 38th IAHR World Congress, 1-6 September 2019, Panama City, Panama.
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