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Education

University of Southern California, Los Angeles, CA, US Ph.D in Civil Engineering (Advisor : Patrick J. Lynett) - Dissertation Title : <i>Wave Induced Hydrodynamic Complexity and Transport in the Nearshore</i>	Aug. 2012
Texas A&M University, College Station, TX, US M.E. in Civil Engineering (Advisor : Patrick J. Lynett) - Research Topic: <i>Coupled Numerical Model for Lifeline Tsunami Evolution</i>	Dec. 2011
Seoul National University, Seoul, Korea M.S. in Civil, Urban and Geosystem Engineering (Advisor : Kyung-Duck Suh) - Thesis Title : <i>Calculation of Irregular Wave Reflection from Perforated-Wall Caisson Breakwaters</i>	Feb. 2002
Seoul National University, Seoul, Korea B.S. in Civil, Urban and Geosystem Engineering	Feb. 2000

Employments

Korea University, Seoul, Korea Assistant Professor	Sep. 2015 - present
University of Ulsan, Ulsan, Korea Assistant Professor	Sep. 2013 - Aug. 2015
University of Southern California, Los Angeles, CA, USA Postdoctoral Scholar - Research Associate	Sep. 2012 - Aug. 2013
University of Southern California, Los Angeles, CA, USA Graduate Research Assistant	Sep. 2011 - Aug. 2012
Oregon State University, Corvallis, OR, USA Visiting Graduate Researcher in O.H. Hinsdale Wave Research Laboratory - Performed experiments of solitary wave evolutions over a 3D shallow shelf (funded by NSF)	May. 2009 - Jul. 2009
Texas A&M University, College Station, TX, USA Graduate Research Assistant	Aug. 2008 - Aug. 2011
Hyundai Engineering & Construction Co., Korea Assistant Senior Engineer	Mar. 2002 - Jul. 2008

Certificates

Professional Engineer (#79108PE), OR, USA	since 2007
Information Processing Engineer, Korea	since 1999

Honors and Awards

Best Paper Awards, KSCOE Fall Conference Korea Society of Coastal and Ocean Engineers, Korea	Fall 2013
Chester P. Jelesnianski Scholarship Zachry Department of Civil Engineering, Texas A&M University	2010-2011
Joseph A. Orr. Fellowship Zachry Department of Civil Engineering, Texas A&M University	2008-2009
Scholarship Assistance Seoul National University, Korea	1997-1999

Professional Memberships

American Society of Civil Engineers(ASCE)	since 2014
Coasts, Oceans, Ports and Rivers Institute(COPRI)	since 2014
American Geophysical Union(AGU)	since 2014
International Association of Hydraulic Engineering and Research(IAHR)	since 2014
Coastal Education & Research Foundation(CERF)	since 2014
Korean Society of Civil Engineers(KSCE)	since 2002
Korean Society of Coastal and Ocean Engineers(KSCOE)	since 2002
Korean Water Resource Association(KWRA)	since 2002

Research Interests

Multi-scale hydrodynamic modeling of ocean waves

- Development of hybrid/parallelized model for coastal processes by long waves.

Turbulent mixing processes in the nearshore

- Study on the physical diversity in estuarine flows such as wave-current interaction, freshwater-seawater mixing, wave breaking, wave-bottom interaction

Tsunami modeling with high accuracy and efficiency

- Improvement of tsunami modeling tool with better physical understanding, numerical skills and supercomputing system.

Sediment transport by shallow, dispersive and turbulent flows

- Numerical study on sediment transport by long waves using a depth-integrated 2D approach

Professional Skills

Expert in infrastructure designing

- Proficient in using software and tools (AutoCAD, Mike21, ADCIRC, MOST, Boussinesq Models)

Well-established knowledge on coastal engineering

Practical experiences in port and harbor projects

- Design works including planning, draft design, making drawings and bills of quantities
 - Recent participated projects : Pasir-Panjang Container Terminal 3&4 Phases(Singapore), Kwang-Yang Container Terminal Construction(Korea), Kunjang Southern Seawall Construction(Korea), Jebel Ali New Container Terminal #1(UAE), Ras Laffan Port Expansion Project(Qatar), Ulsan Southern Break-water(Korea), Pusan Container Terminal(Korea), Cai Mep International Terminal(Vietnam), Thi Vai Container Terminal Project, Vietnam

Computer languages

- Fortran, C, C++, Matlab, Visual Basic, Java)

Publications

Refereed Journal Articles

S. Son and P. Lynett (2016) Modeling Scour and Deposition in Harbors Due to Complex Tsunami-Induced Currents, in review

T.-H. Jung, **S. Son** and Y.-U. Ryu (2016) Finite Element Solution of Linear Waves on a Sloping Bottom Boundary, *Journal of Coastal Research*, in press

H.-D. Yoon, M. Cho and **S. Son** (2016) Investigation of Wave Breaking Turbulence in Morphodynamic Modelling *Journal of Coastal Research*, SI75, 924-946

S. Son T.-H. Jung, F. Shi (2016) Investigation of Vertical Structure of Rip-currents in the Nearshore Circulation *Journal of Coastal Research*, SI75, 1402-1406

T.-H. Jung, **S. Son** and P. Lynett (2016) A Comprehensive Sensitivity Analysis of Tsunami Model System to the Parametric and Input Uncertainties *Journal of Coastal Research*, SI75, 1117-1121

S. Son and P. Lynett (2014) Interaction of Weakly Dispersive Water Waves with Sheared Currents of Arbitrary Profile, *Coastal Engineering*, Vol. 90, p. 48 – 64.

S. Son and P. Lynett (2014) Nonlinear and Dispersive Free Surface Waves Propagating over Fluids with Weak Vertical and Horizontal Density Variation, *Journal of Fluid Mechanics*, Vol. 748, p. 221 – 240.

P. Lynett, J. Borrero, **S. Son**, R. Wilson, K. Miller (2014) Assessment of Current-Induced Tsunami Hazards for Maritime Planning, *Geophysical Research Letters*, Vol. 41, p. 2048 – 2055.

P. Lynett, R. Weiss, W. Renteria, G. Morales, **S. Son**, M. Arcos and B. MacInnes, (2013) Coastal Impacts of the March 11th Tsunami in the Galapagos Islands, *Pure and Applied Geophysics*, Vol. 170(6 – 8), p. 1189 – 1206

P. Lynett, J. Borrero, R. Weiss, **S. Son**, D. Greer and W. Renteria (2012) Observations and Modeling of Tsunami-Induced Currents in Ports and Harbors, *Earth and Planetary Science Letters*, Vol. 327 – 328, p. 68 – 74.

S. Son, P. Lynett, and D.-H. Kim (2011) Nested and Multi-Physics Modeling of Tsunami Evolution from Generation to Inundation, *Ocean Modelling*, Vol. 38, p. 96 – 113

S.-H. Oh, K.-D. Suh, **S.-Y. Son** and D.-Y. Lee (2009) Performance Comparison of Spectral Wave Models Based on Different Governing Equations Including Wave Breaking, *KSCE Journal of Civil Engineering*, Vol. 13(2), p. 75 – 84

Conference Proceedings

Kim, D.-H., **S. Son** (2015) Coastal Geomorphology Model Using Boussinesq Equation Considering Undertow Effect, *The Twenty-fifth International Offshore and Polar Engineering Conference*, Kona, Hawaii, USA.

S. Son, P. Lynett, J. (2014) Numerical Prediction of Tsunami-Induced Sediment Transport in the Harbor, *AGU(American Geophysical Union) Fall Meeting*, San Francisco, CA

S. Son, P. Lynett, J. (2014) Numerical Study of Morphological Changes by Far-Field Tsunami Impacts, *34th International Conference on Coastal Engineering*, Seoul, Korea

P. Lynett, J. Borrero, **S. Son**, R. Wilson, K. Miller (2013) Assessment of Nearshore Hazard due to Tsunami-Induced Currents(Invited), *AGU(American Geophysical Union) Fall Meeting*, San Francisco, CA

P. Lynett, J. Borrero, **S. Son**, R. Wilson, K. Miller (2013) Assessment of Near Shore Hazard due to Tsunami-Induced Currents, *26th International Tsunami Symposium*, Göcek, Turkey

T.-H. Jung, M. Son, **S. Son**, H.-S. Park (2013) Inclined Bottom Boundary Condition for the Mild-slope Equation, *The 7th International Conference on Asian and Pacific Coasts*, Bali, Indonesia.

P. Lynett, J. Borrero, R. Wilson, K. Miller, K., **S. Son** (2013) Detailed Simulation of Tsunami-Induced Currents in California Ports and Harbors, *Port 2013*, Seattle, WA

P. Lynett, D., **S. Son**, D.-H. Kim (2011) Simulation of tsunami-induced currents in ports and harbors, *Coastal Structures*, Yokohama, Japan.

P. Lynett, D., Swigler, **S. Son**, D. Bryant, and S. A. Socolofsky (2010) Experimental Study of Solitary Wave Evolution over a 3D Shallow Shelf, *Proceeding of 32nd International Conference on Coastal Engineering*, Shanghai, China.

K.-D. Suh, **S. Son**, J.-I. Lee and T.-H. Lee (2004) Calculation of Irregular Wave Reflection from Perforated-wall Caisson Breakwaters using a Regular Wave Model, *Proceeding of the 28th International Conference on Coastal Engineering*, Cardiff, UK.

References

Seoul National University

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University of Southern California

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Texas A&M University

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