Curriculum Vitae

NAME:	Sooyoul Kim
Gender:	Male
University address in Japa	an: Social Systems Engineering Course, Department of Social Systems and Civil Engineering, Graduate School of Engineering, Tottori University, 4-101 Koyama-Minami Tottori 680-8552 Japan
Lab web:	http://www.sse.tottori-u.ac.jp/hp-kaivou/kaivou.html
Personal web:	https://www.researchgate.net/profile/Sooyoul Kim
Tel/Fax: E-mail:	http://www.sse.tottori-u.ac.jp/hp-kaiyou/Kim/ +81-857-31-5311 sooyoul.kim@tottori-u.ac.jp
EDUCATION	PhD in Engineering at Coastal Disaster Provention in Ushan Environment
2004 - 2007	Engineering, Disaster Prevention Research Institute, Kyoto University, Japan Dissertation: Effect of large tidal variation on storm surge in the western coastal sea of Korea
2002 - 2004	Master of Engineering at Hydraulic Engineering, Department of Civil Engineering, Kyonggi University, South Korea Thesis: Analysis of behaviour characteristics of instantaneous input contaminant with variation of dam discharge in the River Han
1995 – 2002	Bachelor of Engineering at Civil Engineering, Kyonggi University, South Korea
EMPLOYMENT	
09/2014 - 12/2015	Academic Visitor,
04/2008 - present	Cardiff School of Engineering, Cardiff University, UK Assistant Professor - full time, Department of Management of Social Systems and Civil Engineering,
	Graduate School of Engineering, Tottori University
10/2007 - 03/2008	Lecturer - part time, Maritime Disasters Research Section, Disaster Prevention Research Institute Kyoto University
04/2007 - 09/2007	Researcher - part time.
	F ,

	Maritime Disasters Research Section,	Disaster Prevention Research
	Institute, Kyoto University	
04/2006 - 03/2007	Research Assistant,	
	Maritime Disasters Research Section,	Disaster Prevention Research
	Institute, Kyoto University	
11/1996 - 01/1999	HGV drivers, Korean National Army Serv	ice - full time,
	(national service)	

AWARD or SCHOLARSHIP

2020	Best Paper Award, The Ports & Harbours Associaton of Japan
2019	Best Paper Award, Japanese Association for Coastal Zone Studies
2018	Certificate of Outstanding Contribution in Reviewing awarded October
	2018, Applied Ocean Research
2018	Certificate of Outstanding Contribution in Reviewing awarded October
	2018, Estuarine, Coastal and Shelf Science
2016	Certificate of Outstanding Contribution in Reviewing awarded October
	2016, Ocean Modelling
2014	Certificate of Reviewing Awarded since July 2014, Ocean Engineering
2008 - 2010	Visiting Fellowships in Canadian Government Laboratories,
	Natural Sciences and Engineering Research Council of Canada,
	PIN: 336417 (not taken up)
2004 - 2007	Yoshida Scholarship Foundation
	($\pm 210,000$ per month for 3 years and special grant of $\pm 2,500,000$)

GRANTS (in JSPS, public and commercial sectors)

04/2020 - 03/2022	"The development of one-week ahead wave model using global wave data and machine learning technics"
	funded by Specialists Centers of Port and Airport Engineering
	(¥2,000,000),
	Co-Investigator
04/2020 - 03/2022	"Development of a compound model of surge, wave, and river and
	complex risk assessment due to climate change"
	funded by the Japan Society for the Promotion of Science (¥ 4,420,000),
	Principal -Investigator
04/2019 - 03/2022	"Effect of a boundary process between atmosphere and sea considering
	waves and its assessment"
	funded by the Japan Society for the Promotion of Science (¥ 50,000,000),
	Co-Investigator
04/2019 - 03/2021	"The development of an integrated flooding model of wave runup, wave,
	tide and surge"
	funded by the Japan Society for the Promotion of Science (¥ 20,000,000),
	Co-Investigator

04/2019 - 03/2021	"Probabilistic projection of future change in mega storm surge risk by storm surge model improvement and multi ensemble experiments" funded by the Japan Society for the Promotion of Science (¥ 20,000,000),
	Co-Investigator
04/2019 - 03/2021	"The development of one-week ahead wave model using global wave data
	and machine learning technics"
	funded by Specialists Centers of Port and Airport Engineering
	(¥2,000,000),
	Co-Investigator
04/2018 - 03/2022	"Integrated research program for advancing climate models (TOUGOU)".
	funded by Ministry of Education, Culture, Sports, Science and Technology, Sub-Investigator
04/2017 - 03/2020	"Study on wave and storm surge modeling on the Sanin coast due to
01/2017 00/2020	explosive low pressure systems and typhoons"
	funded by Chukoku Regional Development Bureau, Ministry of Land, Infrastructure, Transport and Tourism (X15,000,000)
	Principal Investigator
04/2017 = 03/2019	"The development of wave prediction models using machine learning
04/2017 - 03/2017	technics "
	funded by TOA Construction Corporation ($\pm 2,000,000$)
	Principal-Investigator
04/2016 - 03/2019	"Study on characteristics of beach profile change on the Kaike Beach due
01/2010 05/2019	to extreme waves for the development of coastal management system"
	funded by Chukoku Regional Development Bureau. Ministry of Land
	Infrastructure, Transport and Tourism (¥25.350.000).
	Co-Investigator
04/2015 - 03/2017	"The development of wave prediction models using machine learning
	technics."
	funded by TOA Construction Corporation ($\frac{1}{2}$,000,000).
	Principal-Investigator
04/2015 - 03/2017	"The development of models for the worst-classed typhoon and the storm
	surge, and the estimate of return period"
	funded by the Japan Society for the Promotion of Science ($\frac{1}{4}$ 19,960,000),
	Co-Investigator
04/2016 - 03/2017	"Study for the mitigation and measure of breakwater deterioration"
	funded by Chukoku Regional Development Bureau, Ministry of Land,
	Infrastructure, Transport and Tourism (¥3,841,630),
	Principal-Investigator
04/2014 - 03/2015	"Improvement of storm surge forecasting at Hamada, Sakai Minato and
	Tunuit, funded by Chukoku Regional Development Purson Ministry of Land
	Infrastructure, Transport and Tourism (¥1,500,000)
	$\frac{1}{2} = \frac{1}{2} = \frac{1}$
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08/2012 - 03/2014	"Development of a technique for restoration and maintenance of sand beach along Tottori Prefecture",
	funded by the local government of Tottori Prefecture (¥ 4,148,571), Principal Investigator
04/2012 - 03/2013	"A study of the application of doppler rider measured-wind data to the storm surge and wave models",
	funded by Mitsubishi Electric Co. (¥ 500,000), Sub-Investigator
04/2012 - 03/2017	"SOUSEI, Program for Risk Information on Climate Change",
	funded by Ministry of Education, Culture, Sports, Science and Technology, Sub-Investigator
04/2011 - 03/2014	"Estimate of combined waves and storm surges at Hamada, Sakai Minato,
	funded by Chukoku Regional Development Bureau, Ministry of Land, Infrastructure, Transport and Tourism (¥ 10,000,000), Principal-Investigator
04/2011 - 03/2014	"Development of storm surge forecast model based on climate change projection along the Sanin Coast"
	funded by the Japan Society for the Promotion of Science (¥ 5,000,000), Principal-Investigator
04/2008 - 03/2010	"Storm surge and inundation modeling along Sanin Coast"
	funded by the Japan Society for the Promotion of Science (¥ 3,000,000), Principal-Investigator
	Other research donations and contract research funding from commercial sectors (more than 217,000 USD)
External Project Adviser	
2019-2023	Fundamental assessment of wind and wave energy resources in Malaysian seas considering the 100-yearly effect of climate change,
	Universiti Teknologi Petronas, Malaysia
2018-2019	Study for the mechanism of the after-runner storm surge in the north coast of Vietnam by a coupled numerical model and proposal for the improvement technology of storm surge forecasting under the climate change,
	National Centre for Hydrometeorological Forecasting – NCHMF, Vietnam

ACADEMIC SERVICES

Reviewer for:

Applied Ocean Research (Outstanding Contribution in 2018), Aquatic Ecosystem Health & Management, Coastal Engineering Journal, Estuarine, Coastal and Shelf Science, Frontiers,

	International Journal of Disaster Risk Reduction, JGR Atmospheres, JGR Oceans, Journal of Hydro-environment Research, Journal of Marine Science and Engineering, Journal of Oceanology and Limnology, Marine Geodesy, Marine Structures, MDPI Atmospherer, Meteorological Applications, MethodX, Natural Hazards, Natural Hazards, Natural Hazards and Earth System Sciences, Ocean Engineering, (Certificate of Reviewing in 2014), Ocean modelling, (Outstanding Contribution in 2016), Pure and Applied Geophysics, Scientific Reports and Water Science and Engineering,
Grant reviewer for	The National Foundation for Science and Technology Development of Vietnam
International Coastal Engineering Committee member of:	International Society of Offshore and Polar Engineers (ISOPE)
Member of:	Japan Society of Civil Engineers (JSCE), American Geophysical Union (AGU), American Society of Civil Engineers (ASCE), Coastal Education & Research Foundation (CERF) Korean Society of Coastal Disaster Prevention, Korean Society of Coastal and Ocean Engineers, and Korea Water Resources Association
Editor of Editorial Board: Guest Editor:	Vietnam Journal of Hydrometeorology (2020-present) Journal of Marine Science and Engineering (JMSE), 2019-2020

PRIMARY RESEARCH INTERESTS

- 1) Fluid dynamics and Hydrodynamics,
- 2) Combined numerical modelling for coasts (surges, waves, surges, tides and sediments),

- 3) Coupling modelling of atmosphere and ocean,
- 4) Storm surge modelling,
- 5) Wave modelling,
- 6) Sediment transport modelling,
- 7) Boundary layers in the bottom and surface of ocean,
- 8) Machine learning method (Artificial neural network, GMDH, Deep learning, etc), and
- 9) Storm surge and wave forecast

SKILLS

- 1) Applied Mathematics,
- 2) Numerical modeling (FDM, FEM, etc),
- 3) Scientific programming in Fortran (from the classic fortran (Fortran77) to the modern fortran (Fortran 2015)),
- 4) Some graphic tools (Generic Mapping Tools (GMT), NCAR Command Language (NCL), IGOR, Illustrator, Photoshop, etc.),
- 5) Parallel computing (Message Passing Interface (MPI)),
- 6) Matlab,
- 7) Bash/shell scripting, and
- 8) Mac, Linux and Windows platforms.

LANGUAGE

- 1) Korean: a native speaker and writer
- 2) English: a fluent speaker and writer
- 3) Japanese: a fluent speaker and writer

MODULES TAUGHT

Graduation research for undergraduate and graduate students is taken up every year. Spring 2019

- Applied Mathematics
- Fluid Mechanics (taken up in English)
- Engineering Design Project (Coordinator)

Autumn 2018

- Introduction and Practice of Mechanics (Contributor)
- Exercises in Risk Management

Spring 2018

- Applied Mathematics
- Fluid Mechanics (taken up in English)
- Engineering Design Project (All staff)

Autumn 2017

- Introduction and Practice of Mechanics (Contributor)
- Exercises in Risk Management

Spring 2017

- Applied Mathematics
- Fluid Mechanics (taken up in English)
- Engineering Design Project (All staff)

Autumn 2016

- Introduction and Practice of Mechanics (Contributor)
- Exercises in Risk Management

Spring 2016

- Applied Mathematics
- Fluid Mechanics (taken up in English) (Contributor)
- Engineering Design Project (All staff)

Spring 2014

- Group Project on Social Management Systems (All staff)
- Computer Exercise in Applied Systems Engineering (Contributor)
- Fluid Mechanics (taken up in English) (Contributor)
- Exercises in Hydraulics

Autumn 2013

- Social Infrastructure Engineering Laboratory (Contributor)
- Introduction to Dynamic Modelling (Contributor)
- Exercises in Risk Management

Spring 2013

- Lectures on Social Systems Engineering (All staff)
- Computer Exercise in Applied Systems Engineering (Contributor)
- Exercises in Hydraulics

Autumn 2012

- Social Infrastructure Engineering Laboratory (Contributor)
- Introduction to Dynamic Modelling (Contributor)
- Overseas Practical Education Program in Mexico (taken up in English) (Contributor)
- Exercises in Risk Management

Spring 2012

- Lectures on Social Systems Engineering (All staff)
- Computer Exercise in Applied Systems Engineering (Contributor)
- Exercises in Hydraulics

Autumn 2011

• Social Infrastructure Engineering Laboratory (Contributor)

Spring 2011

- Lectures on Social Systems Engineering (All staff)
- Computer Exercise in Applied Systems Engineering (Contributor)
- Exercises in Hydraulics

Autumn 2010

- Social Infrastructure Engineering Laboratory (Contributor) Spring 2010
 - Lectures on Social Systems Engineering (All staff)
 - Computer Exercise in Applied Systems Engineering (Contributor)

Spring 2009

- Lectures on Social Systems Engineering (All staff)
- Computer Exercise in Applied Systems Engineering (Contributor) Spring 2008
 - Lectures on Social Systems Engineering (All staff)
 - Calculus

a. Articles in preparation/under review in referred Journal

- 1) <u>Sooyoul Kim</u>, T., Takeda, H., Mase, Nearshore wave forecast for Japanese coasts using Group Method of Data Handling trained with real-time global wave forecasts and observed wave data (In preparation)
- 2) <u>Sooyoul Kim</u>, T., Takeda, H., Mase, K., Kawasaki, Nearshore wave prediction at a Japan coast nearshore employing global wave data and machine learning technique, Ocean Engineering (In reviewing)
- Nguyen Thi Hien, Cao Truong Tran, Xuan Hoai Nguyen, <u>Sooyoul Kim</u>, Nguyen Ba Thuy, Ngo Van Manh, Genetic Programming for Storm Surge Forecasting, Ocean Engineering (In reviewing)
- 4) Rikito Hisamatsu, Shigeru Tabeta, <u>Sooyoul Kim</u>, Effective assessment of infrequent sea level rises due to tropical cyclones (In preparation)
- 5) <u>Sooyoul Kim</u> and Hajime Mase, Storm surge forecast using GMDH technique (In preparation)
- 6) Nguyen Ba Thuy, <u>Sooyoul Kim</u>, Interaction of surge and wave on strong/super typhoon in the Northern coastal of Vietnam (In preparation)

b. Articles published or accepted in referred chapters and books

 <u>Sooyoul Kim</u> (2019) Storm surges, In Cochran, J. Kirk; Bokuniewicz, J. Henry; Yager, L. Patricia (Eds.) Encyclopedia of Ocean Sciences, 3rd Edition. vol. 3, pp. 663-671, Elsevier. ISBN: 978-0-12-813081-0

c. Articles published or accepted in referred Journals (In English)

- 1) Nguyen Ba Thuy, Sooyoul Kim, Tran Ngoc Anh, Nguyen Kim Cuong, Pham Tri Thuc, Lars Robert Hole (2020) The influence of moving speeds, wind speeds, and sea level pressures on after-runner storm surges in the Gulf of Tonkin, Vietnam, Ocean Engineering, 212, 107613, <u>https://doi.org/10.1016/j.oceaneng.2020.107613</u>
- 2) Jung-A Yang, <u>Sooyoul Kim</u>, Sangyoung Son, Nobuhito Mori, Hajime Mase (2020) Assessment of uncertainties in projecting future storm surge, Climate Change (In printing)
- Rikito Hisamatsu, Shigeru Tabeta, <u>Sooyoul Kim</u>, and Katsunori Mizuno (2020) Storm surge risk assessment for the insurance system: A case study in Tokyo Bay, Japan, Ocean & Coastal Management, 189, 1, 105147, <u>https://doi.org/10.1016/j.ocecoaman.2020.105147</u>
- 4) Nobuhito Mori, Tomohiro Yasuda, Taro Arikawa, Tomoya Kataoka, Sota Nakajo, Kojiro Suzuki, Yusuke Yamanaka, Adrean Webb, Tomoyuki Takahashi, Sooyoul Kim, Susumu Araki, Yoko Shibutani, Takashi Yamano, Daiki Sakai, Tomohiro Takagawa, Naoki Tsuruta, Shingo Kawaguchi, Syota Asahi, Takashi Fujiki, Takumu Iwamoto, Yu Chida, Tomoya Shibayama, Miguel Esteban, Tomoyuki Takabatake, Ryota Nakamura, Kohji Uno, Tetsuya Kakinoki, Yasuo Nihei, Daisuke Inazu, Takaaki Shigematsu, Kazunori Sameshima, Kazuhiko Honda, Daiki Satomura, Ibuki Tsujisawa, Kentaro Kumagai, Noriki Sugahara, Shoichi Emoto, Yoshimitsu Tajima (2019) 2018 Typhoon Jebi post-event survey of coastal damage in the Kansai region, Japan, Coastal Engineering Journal, 61, 278-294
- 5) Jihee Oh, In-Chul Kim, Kyung-Duck Suh and <u>Sooyoul Kim</u> (2019) Forecasting sudden high waves on the coasts of East/Japan Sea, Journal of Coastal Research: Special Issue 91, pp. 96–100, DOI: 10.2112/SI91-020.1
- <u>Sooyoul Kim</u>, Shunqi Pan and Hajime Mase (2019) Artificial neural network-based storm surge forecast model: practical application to Sakai Minato, Japan, Applied Ocean Research, Vo. 91, 101871, https://doi.org/10.1016/j.apor.2019.101871

- 7) Jung-A Yang, <u>Sooyoul Kim</u>, Nobuhito Mori, Hajime Mase (2018) Assessment of long-term impact of storm surges around the Korean Peninsula based on a large ensemble of climate projections, Coastal Engineering, 142, 1-8, https://doi.org/10.1016/j.coastaleng.2018.09.008.
- Sooyoul Kim and Lee, H.S. (2018) Combined Approach of Empirical Mode Decomposition and Artificial Neural Network for Sea-level Record Analysis, Journal of Coastal Research: Special Issue 85, pp. 1091–1095, <u>https://doi.org/10.2112/SI85-219.1</u>.
- Sooyoul Kim, Jihee Oh, K.D. Suh and H. Mase (2017) Estimation of climate change impacts on storm surge: Application to Korean Peninsula, *Coastal Engineering Journal*, 59, 170004, 10.1142/S0578563417400046.
- 10) Yang Jung-A, <u>Sooyoul Kim</u>, Nobuhito Mori, and Hajime Mase (2017) Bias correction of simulated storm surge height considering complex coastline, *Hydrological Research Letters*, 11(2), 121-127.
- Nguyen Ba Thuy, N.A.K.Nandasena, Vu Hai Dang, <u>Sooyoul Kim</u>, Nguyen Xuan Hien, Lars Robert Hole, Tran Hong Thai (2017) Effect of river vegetation with timber piling on ship wave attenuation: Investigation by field survey and numerical modeling, *Ocean Engineering*, 129, 37-45
- 12) Nguyen Ba Thuy, <u>Sooyoul Kim</u>, Do Dinh Chien, Vu Hai Dang, Hoang Duc Cuong and Lars Robert Hole (2017) Assessment of storm surge on the middle coast of Vietnam, *Journal of Coastal Research*, Vol.33, 3, 518-530, DOI: 10.2112/JCOASTRES-D-15-00248.1
- 13) <u>Sooyoul Kim</u>, Yoshiharu Matsumi, Shunqi Pan and Hajime Mase (2016) A real-time forecast model using artificial neural network for after-runner storm surges on the Tottori coast, Japan, *Ocean Engineering*, 122, 44-53
- 14) <u>Sooyoul Kim</u>, Nobuhito Mori, Hajime Mase, Tomohiro Yasuda (2015) The role of sea surface drag in a coupled surge and wave model for Typhoon Haiyan 2013, *Ocean Modelling*, 96, p.65-84, 10.1016/j.ocemod.2015.06.004
- 15) <u>Sooyoul Kim</u>, Y., Matsumi, T., Yasuda, H., Mase (2014), Storm surges along the Tottori coasts following a typhoon, *Ocean Engineering*, Vol. 91, 133-145, DOI: 10.1016/j.oceaneng.2014.09.005.
- 16) Nobuhito Mori, Masaya Kato, <u>Sooyoul Kim</u>, Hajime Mase, Yoko Shibutani, Tetsuya Takemi, Kazuhisa Tsuboki, Tomohiro Yasuda (2014) Local amplification of storm surge by Super Typhoon Haiyan in Leyte Bay, *Geophysical Research Letters*, Vol. 41, 5106-5113, DOI: 10.1002/2014GL060689.
- 17) Tomohiro Yasuda, Sota Nakajo, <u>Sooyoul Kim</u>, Hajime Mase, Nobuhito Mori and Kevin Horsburgh (2014) Evaluation of Future Storm Surge Risk in East Asia based on State-of-the-art Climate Change Projection, *Coastal Engineering*, Vol. 83, 65-71.
- 18) <u>Sooyoul Kim</u>, Yasuda, T., Mase, H., (2010) Wave set-up in the storm surge along open coasts during Typhoon Anita, *Coastal Engineering*, 10.1016/j.coastaleng.2010.02.004.
- 19) <u>Sooyoul Kim</u>, Yasuda, T., Mase, H., (2008) Effects of Tidal Variations on Storm Surges and Waves, *Applied Ocean Research*, 30,311-322.

d. Articles published or accepted in referred Journals (In Engligh, Korean, Japanese and Vietnamese with English Abstract)

- 桑江朝比呂,三戸勇吾,有川太郎,石川洋一,木所英昭,澁谷容子,志村智也,清野 聡子,羽角華奈子,茂木博匡,山北剛久,李 漢洙,金,洗列,久保田真一,倉原義 之介,辻尾大樹,二宮順一,伴野雅之,古市尚基,安田誠宏,森 信人,武若 聡 (2020) 今後の我が国の沿岸分野における気候変動対応で取り組むべき課題(投稿中)
- Hajime Mase, <u>Sooyoul Kim</u>, Makoto Hasegawa, Jae-Hoon Jeong and Jong-Sung Yoon (2020) Development of Wave Overtopping–Overflow Transition Model Based on Full-scale Experiments, Journal of Ocean Engineering and Technology 34(2), 128-135

- 3) Hajime MASE, Sooyoul KIM, Masatoshi YUHI, Masahide TAKEDA, Shinya UMEDA, Koji KAWASAKI, Tetsuya HIRAISHI and Hiroshi MATSUSHITA (2020) Combined wave overtopping and overflow modelling in wave-surge coupling simulation model, Journal of Japan Society of Civil Engineers, Ser. B2 (Coastal Engineering), Vol. 76, No. 1, p. 7-19 (In Japanese).
- 4) Takao OTA, Shinpei TAKASAGO and <u>Sooyoul KIM</u> (2019) Influence of deformation of wave dissipating works and long period swell on wave pressure acting on caisson breakwater, Journal of Japan Society of Civil Engineers, Ser. B2 (Coastal Engineering), Vol. 75, No. 2, p. I_907-I_912 (In Japanese).
- 5) Tracey H.A. TOM, <u>Sooyoul KIM</u>, Masahide TAKEDA, Yoshinosuke KURAHARA, Chisato HARA, Yamato NISHIYAMA, Koji KAWASAKI and Hajime MASE (2019) One week wave prediction method by neural network using global wave forecast data, Journal of Japan Society of Civil Engineers, Ser. B2 (Coastal Engineering), Vol. 75, No. 2, p. I_133-I_138 (In Japanese).
- 6) Tracey H.A. TOM, Ai IKEMOTO, Hajime MASE, Koji KAWASAKI, Masahide TAKEDA and <u>Sooyou KIM</u> (2019) Wave prediction in the sea of Japan by deep learning using meteorological data, Journal of Japan Society of Civil Engineers, Ser. B2 (Coastal Engineering), Vol. 75, No. 2, p. I_145-I_150 (In Japanese).
- 7) Sooyoul KIM, Chisasato HARA, Yoshinosuke KURAHARA, Yamato NISHIYAMA, Masahide TAKEDA, Tracey H. A. TOM, Koji KAWASAKI and Hajime Mase (2019) Application of gmdh-based one week wave prediction model to Japanese near shore wave prediction, Journal of Japan Society of Civil Engineers, Ser. B2 (Coastal Engineering), Vol. 75, No. 2, p. I_115-I_120 (In Japanese).
- Yuhi HAYAKAWA, Keisuke MIZUTO, Kazuki YAGISAWA, Shigeo OYA and <u>Sooyoul KIM</u> (2019) Estimation of inundation in Nemuro storm surge using coupled modeling of wave and storm surge, Journal of Japan Society of Civil Engineers, Ser. B2 (Coastal Engineering), Vol. 75, No. 2, p. I_235-I_240 (In Japanese).
- 9) Masatoshi YUHI, Naoya OHTANI, Hajime MASE, <u>Sooyoul KIM</u>, Shinya UMEDA and Corrado ALTOMARE (2019) Applicability enhancement of integrated formula of wave overtopping and runup modeling, Journal of Japan Society of Civil Engineers, Ser. B2 (Coastal Engineering), Vol. 75, No. 2, p. I_739-I_744 (In Japanese).
- 10) Nobuhito MORI, Tetsuya TAKEMI, <u>Sooyoul KIM</u>, Yoko SHIBUTANI, Tomohiro YASUDA, Sota NAKAJO, Junichi NINOMIYA, Tomoya SHIMURA (2019) Pesudo prediction experiments of storm surge and waves in 2018 Typhoon Jebi by high resolution weather prediction and coupled surge-wave model, Journal of Japan Society of Civil Engineers, Ser. B2 (Coastal Engineering), Vol. 75, No. 2, p. I_283-I_288 (In Japanese).
- 11) <u>Sooyoul KIM</u>, Nobuhito MORI, Tetsuya TAKEMI, Yoko SHIBUTANI, Tomohiro YASUDA, Sota NAKAJO, Tomoya SHIMURA AND Junichi NINOMIYA (2019) Hindcast of storm surge and wave by typhoon jebi (2018) using a parametric wind and pressure model and WRF, Journal of Japan Society of Civil Engineers, Ser. B2 (Coastal Engineering), Vol. 75, No. 2, p. I_277-I_282 (In Japanese).
- 12) Yuya TAKA, Junichi NINOMIYA, Nobuhito MORI and <u>Sooyoul KIM</u> (2019) Future change of storm surge caused by explosive cyclone in Nemuro Bay using d4pdf, Journal of Japan Society of Civil Engineers, Ser. B2 (Coastal Engineering), Vol. 75, No. 2, p. I_225-I_230 (In Japanese).
- 13) Sota NAKAJO, Hibiku HANAMOTO and <u>Sooyoul KIM</u>, (2019) Basic study on the estimation of potential of tropical cyclone and storm surge around Ishigakijima island, Journal of Japan Society of Civil Engineers, Ser. B3 (Ocean Engineering), Vol. 75, No. 2, p. I_67-I_72 (In Japanese).
- 14) Chisato HARA, <u>Sooyoul KIM</u>, Yoshinosuke KURAHARA, Yamato NISHIYAMA, Masahide TAKEDA and Hajime MASE, (2019) Accuracy verification of coastal wave numerical forecast model, GPV (cwm), for marine construction, Journal of Japan Society of Civil Engineers, Ser. B3 (Ocean Engineering), Vol. 75, No. 2, p. I_935-I_940 (In Japanese).

- 15) <u>Sooyoul KIM</u>, Masahide TAKEDA, Hajime MASE, Yoshinosuke KURAHARA, Chisasato HARA, Yamato NISHIYAMA, Koji KAWASAKI and Hideaki MIZUTANI, (2019) One week wave prediction method applying GMDH's partial expression to global wave forecast and validating accuracy, Journal of Japan Society of Civil Engineers, Ser. B3 (Ocean Engineering), Vol. 75, No. 1, 18-26 (In Japanese).
- 16) Rikito HISAMATSU, <u>Sooyoul KIM</u> and Shigeru TABETA (2019) Field survey and simulation of storm surge due to Typhoon Jebi 2018, Journal of Coastal Zone Studies, 32(1), 63-68, (In Japanese).
- 17) Rikito HISAMATSU, <u>Sooyoul KIM</u> and Shigeru TABETA (2018) Estimating distribution of storm surge inundation depth by return period along Tokyo Bay, Journal of Coastal Zone Studies, Vol. 31, No.1, pp. 45-56,2018, (In Japanese).
- 18) Rikito HISAMATSU, <u>Sooyoul KIM</u> and Shigeru TABETA (2018) Estimation of storm surge loss along the Tokyo bay coast by stochastic approach, Journal of Japan Society of Civil Engineers, Ser. B2 (Hydraulic Engineering), Vol.74, No.5, I_1393-I_1398, 2018, (In Japanese).
- 19) Mase, H., Yuhi, <u>M., Kim, S.</u>, Kawasaki, K., Mizutani, H. and Hiraishi, T. (2018) Transient wave runup, overtopping and overflow modelling for inundation simulation due to storm surge, Journal of Japan Society of Civil Engineers, Ser. B2 (Coastal Engineering), Vol. 74, No. 2, I_553-I_558 (In Japanese)
- 20) <u>Kim, S.,</u> Mase, H, Kawasaki, K., Yuhi, M., Mizutani, H. and Hiraishi, T. (2018) Surge-wavetide prediction model including transient wave runup, overtopping and overflow modelling, Journal of Japan Society of Civil Engineers, Ser. B2 (Coastal Engineering), Vol. 74, No.2, I_547-I_552 (In Japanese)
- 21) <u>Kim, S.</u> Chiyonobu, K, Nakajo, S., Ota, T. and Yasuda, T. (2018) Study for impact of climate change on typhoon and wave, Journal of Japan Society of Civil Engineers, Ser. B2 (Coastal Engineering), Vol. 74, No.2, I_673-I_678 (In Japanese)
- 22) <u>Sooyoul Kim</u>, K. Kumagai and H. Mase (2017) Inundation modelling of Typhoon Haiyan using the storm surge and wave interaction-induced drags of sea surface and bottom, Journal of Japan Society of Civil Engineers, Ser. B2 (Coastal Engineering), Vol. 73, No. 2, p. I_181-I_186 (In Japanese).
- 23) T. Yasuda, K. Iwahara, S. Hirai, S. Nakajo and <u>Sooyoul Kim</u> (2017) Probabilistic evaluation of storm surges in Suruga Bay employing stochastic typhoon model, Journal of Japan Society of Civil Engineers, Ser. B2 (Coastal Engineering), Vol. 73, No. 2, p. I_253-I_258 (In Japanese)..
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- 5) Thai, T.H., Thuy, N.B., Dang, V.H., <u>Sooyoul Kim</u> and Hole L.R. (2017) Impact of the interaction of surge, wave and tide on a storm surge on the north coast of Vietnam, Procedia IUTAM, 25, 82-91, https://doi.org/10.1016/j.piutam.2017.09.013
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- 7) <u>Sooyoul Kim</u>, Y. Matsumi, S. Pan and H. Mase, Real-time wave prediction using artificial neural network, SCACR2015 – International Short Course/Conference on Applied Coastal Research, 28th September – 1st October 2015 – Florence, Italy, 626-63411
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h. Abstract accepted

- <u>Sooyoul Kim</u>, Nobuhito Mori, Tetsuya Takemi, Yoko Shibutani, Tomohiro Yasuda, Sota Nakajo, Tomoya Shimura, Junichi Ninomiya, Hajime Mase, Hindcast of Typhoon Jebi (2018) storm surge, wave and flood using a coupled model of surge, wave, wave runup and overtopping, 2nd International Workshop on Waves, Storm Surges and Coastal Hazards 2019
- 2) <u>Sooyoul KIM</u>, Keishiro CHIYONOBU, Junichi NINOMIYA, Sota NAKAJO, Tomohiro YASUDA, Takao OTA, (2019) Extreme Wave and Storm Surge Assessment Due to Typhoon and Low Pressure Weather System on the Sanin Coast, Japan, AOGS 2019, Singapore, 2019
- 3) Rikito Hisamatsu, <u>Sooyoul Kim</u>, Shigeru Tabeta, "Study on the storm surge loss estimation along the Tokyo Bay coast", Proceedings of the OCEANS'19, Marseille, France, June 2019
- Rikito Hisamatsu, <u>Sooyoul Kim</u>, Shigeru Tabeta, "A study on stochastic storm surge estimation for risk management in insurance systems", Proceedings of the OCEANS'18 MTS/IEEE Kobe/Techno-Ocean 2018, Kobe, Japan, May 2018.
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- 8) <u>Sooyoul Kim</u>, Kumagai, K. and Mase, H. (2016) Surge and flood modelling of Typhoon Haiyan 2013 using a surge-wave-tide coupled model, ECM14
- 9) Sota Nakajo, Hideyuki Fujiki, <u>Sooyoul Kim</u>, Nobuhito Mori, Yoko Shibutani and Tomohiro Yasuda (2016) The effect of variation of tropical cyclone track to assessment of severe storm surge event at Tokyo Bay, ICCE 2016
- 10) <u>Sooyoul Kim</u>, Kumagai, K. and Mase, H. (2016) Surge and flood modelling of Typhoon Haiyan 2013 using a surge-wave-tide coupled model, ICCE 2016
- 11) Kumagai, K., <u>Sooyoul Kim</u>, Pan, S. and Mase, H. (2016) Coupled modelling of waves and surges around Hokkaido coast due to winter low pressure system, ICCE 2016
- 12) Junichi Ninomiya, Tetsuya Takemi, Nobuhito Mori, Yoko Shibutani and <u>Sooyoul Kim</u> (2015) Dynamical Downscaling of Typhoon Vera (1959) and related Storm Surge based on JRA-55 Reanalysis, AGU Fall Meeting.
- 13) Jihee Oh, <u>Sooyoul Kim</u>, Kyung-Duck Suh, Tomohiro Yasuda and Hajime Mase, Impact of Future Tropical Cyclones on Storm Surges around the Korean Peninsula, 5th International Summit on Hurricanes and Climate Change, Creta, Greece, 2015
- 14) Shibutani, Y., <u>Sooyoul Kim</u>, T., Yasuda, N., Mori and H., Mase (2014) Impact assessment of storm surge and inundation with sensitivity of future tropical cyclone changes, The 11th Annual Meeting Asia Oceania Geosciences Society

- 15) <u>Sooyoul Kim</u>, Y. Matsumi, T. Yasuda, and H. Mase (2010) Analysis of anomalous storm surge around west coast of the Sea of Japan, Storm Surges Congress, Hamburg, Germany.
- 16) Sooyoul Kim, Yasuda, T., Mase, H., Matsumi, Y., (2009) Coupling effect of surge and wave on storm surge height -case study in Tosa Bay, Japan -, *Eleventh Int. Conf. on Estuarine and Coastal Modeling*, Seattle, USA.
- i. Non-referred contributions
- 1) <u>Sooyoul Kim</u>, (2007) A coupled model of Surge, WAve and Tide (SuWAT) for storm surges and waves, User manual (still updated, latest release: 2015)
- Sooyoul Kim, T., Yasuda, H., Mase and Y., Matsumi, (2013) Storm surge simulations based on climate change projection data along the Korea coast, *Proc. of Korean Society of Ocean and Coast Engineering*, Jeju, Korea, pp. 1619-1622.
- <u>Sooyoul Kim</u>, Yoon, S.E., Matsumi, Y., (2009) Numerical study of Storm Surge due to Typhoons influenced by Climate Change, *Proc. Conference on Korea Society of Hazard Mitigation*, Seoul, Korea.
- 4) <u>Sooyoul Kim</u>, Takayama, T., Yasuda, T., (2007) Tide-Surge-Wave Coupling Model and Its Application to Surge and Wave Hindcast for Typhoon 0603, *Annuals of Disas. Prev. Res. Inst.*, Kyoto Univ., No.50B 537-548.
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- 6) <u>Sooyoul Kim</u>, Ko, J.H., Lee, J.H., Yoon, S.E., (2003) Analysis of Travel time of instantaneous input contaminants at the downstream of Han River, *Proc. Conference on Korean Society of Hazard Mitigation*, Korea, 457-462 (in Korean).

j. Invited lecture

- Development of a neural network-based storm surge forecast system on the Tottori coast, Japan, Joint Swansea University-Kansai University Workshop on Artificial Neural Network applications for coastal morphodynamics and hazard forecasting, Kansai University, 14th September 2018.
- 2) On the development of a coupled model of surge, wave and tide for evaluation of future storm surges, Hanyang University, Korea, 5th December 2017.
- 3) On the development of a coupled model of surge, wave and tide for evaluation of future storm surges, Kunsan University, Korea, 29th November 2017.
- 4) On the development of a coupled model of surge, wave and tide for evaluation of future storm surges, Korea University, Korea, 28th November 2017.
- 5) On the development of a coupled model of surge, wave and tide for evaluation of future storm surges, Geosystem Research, Korea, 31st October 2017.
- 6) SuWAT Workshop, Hydrosoft, Japan, 29th September 2017
- 7) Uncertainty of climate change impact on future local storm surge in the Korean Peninsula, The 3rd Korea-Japan-Taiwan Joint Seminar Climate Change Impacts on Coastal Engineering Problems, Seoul University, Korea, 21-22 September 2017
- 8) SuWAT Workshop, University of Malaya, Malaysia, 14-18th August 2017.
- 9) Storm surge forecasting and hindcasting using a numerical model and an artificial neural network, Kanazawa University, Japan, 2nd June 2016

10) SuWAT Workshop, Korea Environment Institute, 5 August 2014

The coupled model of Surge, WAve and Tide (SuWAT) distributions

- Academic sector (since 2007):
 - Japan: Kyushu Kyoritsu University, Yokohama University, Fukui Prefectural University, Kumamoto University, Chiba Institute of Technology, Tokyo City University, Kyusyu University, Kobe City College of Technology, Osaka City University, Kansai University, Kanazawa University, Kyoto University
 - Seoul National University (Korea), Korea University (Korea), University of Malaya (Malaysia), National Centre for Hydrometeorological Forecasting (Vietnam), Korean Environment Institute (Korea), Hanyan University (Korea)
- Commercial sector (since 2007):
 - Japan: Pacific Consultants Co., Ltd., Idea Corporation, Japan Weather Association, Public Consultant, Penta-Ocean Construction Co., Crearia, Hydro, Nippon Koei Co., Ltd., Alpha Hydraulic Engineering Consultants Co., Ltd., Mitsui Consultants Co., Ltd., Kajima Technical Research Institute, Hirotec Technical Research Institute, MS&AD Insurance Group
 - Korea: Geosystem Research
 - US: AIR-WORLDWIDE
 - o UK: JBA Consulting

References

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