Fengyan Shi

Education

Ph.D., Environmental & Physical Oceanography, Ocean University of Qingdao, 1995

Academic experience

University of Delaware, Department of Civil and Environmental Engineering, Professor, 2019

Other Related Experience

Naval Research Laboratory, Stennis Space Center, Senior Summer Faculty, June-Aug, 2014
University of Rome, Sapienza, Visiting Professor, June-August, 2016
OAK RIDGE Institute for Science and Education, ORISE Faculty, June-Aug, 2020

Service activities

Associate Editor, ASCE Journal of waterway, Port, Coastal and Ocean Engineering
International Editor of Korean Society of Coastal Ocean Engineers
Convener and Chair of session of nearshore processes at AGU 2008 Fall Meeting, Session Chair of 32nd and 36th International Conference of Coastal Engineering
Panel of National Science Foundation (2018)

Journal publications of last five years (2015-present)

- Chen, Y., Shi, F., Kirby, J. T., and Liang, B., 2020, "A computationally efficient subgrid model for coupledsurface and groundwater flows", Coastal Engineering, DOI: 10.1016/j.coastaleng.2020.103665
- Yuan, Y., Shi, F., Kirby, J. T., and Yu, F., 2020, "Multiple-GPU acceleration of the Boussinesq-type wave model FUNWAVE-TVD", Journal of Advances in Modeling Earth Systems, doi: 10.1029/2019MS001957
- Puleo, J. A., Cristaudo, D., Torres-Freyermuth, A., Masselink, G., and Shi, F., 2020, The role of alongshore flows on inner surf and swash zone hydrodynamics on a dissipative beach, Continental Shelf Research, DOI: 10.1016/j.csr.2020.104134.
- Bao, J., Cai, F., Shi, F., Zheng, Y., Lu, H., Wu, C., 2020， "Morphodynamic response of sand waves in the Taiwan Shoal to a passing tropical storm", Marine Geology, doi: 10.1016/j.margeo.2020.106196
- Grilli, A., Westcott, G., Grilli, S., Spaulding, M., Shi, F., and Kirby, J.T.,2020, Assessing coastal risk from extreme storms with a phase resolving wave model: Case Study of Narragansett, RI, USA, Coastal Engineering, DOI: 10.1016/j.coastaleng.2020.103735.
- Liu, W., Ning, Y., Shi, F., and Sun Z., 2020 "A 2DH fully dispersive Boussinesq-type model based on a finite-volume and finite-difference TVD-type scheme", Ocean Modelling, 47, DOI: 10.1016/j.ocemod.2019.101559.
- Li, L., Shi, F., Ma, G., and Qui, Q., 2019, "Tsunamigenic potential of Baiyun submarine landslide in the South China Sea", Journal of Geophysical Research: Solid Earth, DOI:10.1029/2019JB018062.
- Zhu, J., Cai, F., Shi, F., Qi, H., Lei, G., Liu, J., Cao, H., and Zheng, J., 2019, "Beach response to layout of drainage pipe outlet during beach nourishment", Estuarine, Coastal and Shelf Science, DOI: 10.1016/j.ecss.2019.106354.
- Shi, J., Shi, F., Kirby, J. T., Zheng, J., Zhang, C., and Malej, M., 2019, "Interplay between grid resolution and pressure decimation in non-hydrostatic modeling of internal waves", Ocean Engineering, DOI:10.1016/j.oceaneng.2019.06.014.
- Ding, Y. and Shi, F., 2019, "An analytical solution for nearshore circulation driven by focused/defocused waves", China Ocean Engineering, 33, 544-553, DOI:10.1016/10.1007/s13344-019-0052-2.

- Choi Y.-K., Seo S.-N., Choi J.-Y., Shi F., Park K.-S., 2019, "Wave prediction in a port using a fully nonlinear Boussinesq wave model", Acta Oceanol. Sin., 38 (7), 1-12. DOI:10.1007/s13131-019-1456-2.
- Choi, Y.-K., Shi, F., Malej, M., and Smith, J. M., 2018, "Performance of various shock-capturing-type reconstruction schemes in the Boussinesq wave model, FUNWAVE-TVD", Ocean Modelling, 131, 86-100. DOI:10.1016/j.ocemod.2018.09.004.
- Wu, G., Shi, F., Kirby, J. T., Shi, J., and Liang, B., 2018, "Modeling wave effects on storm surge and coastal inundation", Coastal Engineering, DOI:10.1016/j.coastaleng.2018.08.011.
- Lu, Y., Shi, F., Kobayashi, N., Malej, M., Zhu, T., and Feng, W., 2018, "Numerical investigation of excessive surge induced by wave overtopping in an inlet-bay system", Coastal Engineering, DOI:10.1016/j.coastaleng.2018.08.009.
- Schambach, L., Grilli, S. T., Kirby, J. T., and Shi, F., 2018, "Landslide tsunami hazard along the upper US East Coast: effects of slide rheology, bottom friction and frequency dispersion", Pure and Applied Geophysics, doi:10.1007/s00024-018-1978-7
- Wargula, A., Raubenheimer, B., Elgar, S., Chen, J.-L., Shi, F., and Traykovski, P., 2018, "Flow asymmetry owing to inertia and waves on an unstratified, shallow ebb shoal", Journal of Geophysical Research: Oceans, DOI:10.1029/2017JC013625
- Orzech, M.D., Shi, F., Bateman, S., Veeramony, J., Calantoni, J., and Kirby, T.J., 2018, "A coupled system for investigating the physics of wave-ice interactions", Journal of Atmospheric and Oceanic Technology, doi:10.1175/JTECH-D-17-0189.1.
- Shi, F., Malej, M., Smith, J. M., and Kirby, J. T., 2018, "Breaking of ship bores in a Boussinesq-type ship-wake model", Coastal Engineering, doi:10.1016/j.coastaleng.2017.11.002.
- Kukulka, T.,Jenkins, R. L., Kirby, J. T., Shi, F. and Scarborough, R. W., 2017, "Surface wave dynamics in Delaware Bay and its adjacent coastal shelf", Journal of Geophysical Research: Oceans, doi:10.1002/2017JC013370
- Lynett P., et al., 2017, "Inter-Model Analysis of Tsunami-Induced Coastal Currents", Ocean Modelling, doi:10.1016/j.ocemod.2017.04.003
- Chakrabarti, A., Brandt, S. R., Chen, Q., and Shi, F., 2017, "Boussinesq modeling of wave induced hydrodynamics in coastal wetlands during Hurricane Isaac", Journal of Geophysical Research: Oceans, DOI: 10.1002/2016JC012093
- Zhou, Z., Yu, X., Hsu, T.-J., Shi, F., Geyer, W. R. and Kirby, J. T., 2017, "Large eddy simulation of idealized river plumes at high Reynolds number", Journal of Geophysical Research: Oceans , DOI: 10.1002/2016JC012334
- Wu, G., Li, H., Liang, B., Shi, F.,Kirby, J. T., and Mieras, R., 2017, "Subgrid Modeling of Salt Marsh Hydrodynamics with Effects of Vegetation and Vegetation Zonation", Earth Surface Processes and Landforms, DOI:10.1002/esp.4121
- Shi, F., Chickadel, C., Hsu, T.-J., Kirby, J. T., Farquharson, G. and Ma, G., 2017, "Frontal features of the Columbia River mouth seen from a high-resolution non-hydrostatic model", Estuarines and Coasts, 40, 296-309, DOI 10.1007/s12237-016-0132-y
- Grilli, S. T., Shelby, M., Kimmoun, O., Dupont, G., Nicolsky, D., Ma, G., Kirby, J. T. and Shi, F., 2017, "Modeling coastal tsunami hazard from submarine mass failures: effect of slide rheology, experimental validation, and case studies off the US East Coast", Natural Hazards, doi:10.1007/s11069-016-2692-3
- Kirby, J. T., Shi, F., Nicolsky, D. and Misra, S., 2016, "The 27 April 1975 Kitimat, British Columbia submarine landslide tsunami: A comparison of modeling approaches", Landslides, 13, 1421-1434, doi:10.1007/s10346-016-0682-x.
- Schnyder, J. S. D., Eberli, G. P., Kirby, J. T., Shi, F., Tehranirad, B., Mulder, T., Ducassou, E., H ebbeln, D. and Wintersteller, P., 2016, "Tsunamis caused by submarine slope failures along western Gr eat Bahama Bank", Scientific Reports (Nature) , 6, 35925, doi:10.1038/srep35925.

- Derakhti, M., Kirby, J. T., Shi, F. and Ma, G., 2016, "NHWAVE: Consistent boundary conditions and turbulence modeling", Ocean Modelling, 106, 121-130, doi: 10.1016/j.ocemod.2016.09.002.
- Derakhti, M., Kirby, J. T., Shi, F. and Ma, G., 2016, "Wave breaking in the surf zone and deep water in a non-hydrostatic RANS model, Part 1: Organized wave motions", Ocean Modeling, 107, 125-138, doi: 10.1016/j.ocemod.2016.09.001.
- Derakhti, M., Kirby, J. T., Shi, F. and Ma, G., 2016, "Wave breaking in the surf zone and deep water in a non-hydrostatic RANS model, Part 2: Turbulence and mean circulation", Ocean Modeling, doi: 10.1016/j.ocemod.2016.09.011.
- Ma, G., Farahani, A. A., Kirby, J. T., Shi, F., 2016, Modeling wave-structure interactions by an immersed boundary method in a sigma-coordinate model, Ocean Engineering, 125, 238-247. doi:10.1016/j.oceaneng.2016.08.027.
- Son, S. Jung, T.-H., and Shi, F., 2016, "Vertical structure of rip-currents in the nearshore Circulation", Journal of Coastal Research , Special issue, 72, 1402-1406, doi:10.2112/SI75-281.1.
- Orzech, M., Shi, F., Veeramony, J., Bateman, S., Calantoni, J. and Kirby, J. T., 2016, "Incorporating floating surface objects into a fully dispersive surface wave model", Ocean Modelling, 102, 14-26, doi:10.1016/j.ocemod.2016.04.007.
- Wu, G., Shi, F., Kirby, J. T., Mieras, R., Liang, B., Li, H. and Shi, J., 2016, "A pre-storage, subgrid model for simulating flooding and draining processes in salt marshes", 49 Coastal Engineering, 108, 65-78, doi:10.1016/j.coastaleng.2015.11.008.
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- Tehranirad, B., Harris, J. C., Grilli, A. R., Grilli, S. T., Abadie, S., Kirby, J. T. and Shi, F., 2015, "Far-field tsunami hazard on the western European and US east coast from a large scale flank collapse of the Cumbre Vieja volcano, La Palma", Pure and Applied Geophysics, doi:10.1007/s00024-015-1135-5.
- Chen, J., Hsu, T., Shi, F., Raubenbeimer, B., and Elgar, S., 2015, "Hydrodynamic and sediment transport modeling of New River Inlet (NC) under the interaction of tides and waves", J. Geophy. Res. , doi:10.1002/2014JC010425.
- Goncharenko, Y.V., Farquharson, G., Shi, F., Raubenheimer, B., Elgar, S.,2015,"Estimation of Shallow-water Breaking Wave Height from Synthetic Aperture Radar",Geosicence and Remote Sensing Letters, doi:10.1109/LGRS.2015.2445492.
- Shi, F., Vittori, G. and Kirby, J. T., 2015, "Concurrent correction method for modeling morphological response to dredging an offshore sandpit", Coastal Engineering , 97,1-10, doi:10.1016/j.coastaleng.2014.12.008.
- Keshtpoor, M., Puleo, J. A., Shi, F. and Ma, G., 2015,"3D Numerical Simula tion of Turbulence and Sediment Transport within a Tidal Inlet", Coastal Engineering, 96,13-26, doi:10.1016/j.coastaleng.2014.10.009.
- Grilli, S. T., O'Reilly, C., Harris, J. C., Tajalli Bakhsh, T., Tehra nirad, B., Banihashemi, S., Kirby, J. T., Baxter, C. D. P., Eggeling, T., Ma , G. and Shi, F., 2015 "Modeling of SMF tsunami hazard along the upper U. S. East Coast: Detailed impact around Oc ean City, MD", Nat. Hazards, doi:10.1007/s11069-014-1522-8.

The complete list of publications can be found at https://fengyanshi.github.io/shi_website/_build/html/pub_journal.html