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PROFESSIONAL PREPARATION

Universidad Autónoma de Baja California, Ensenada, BC, México, Oceanography, B.Sc., 2002

Florida Institute of Technology, Melbourne, FL, USA, Ocean Engineering, M.Sc., 2004

Universidad de Cantabria, Santander, Spain, Coastal Engineering, Ph.D., 2007

APPOINTMENTS

Jul. 2014 – Present: Associate Professor, Instituto de Ingeniería, Universidad Nacional Autónoma de México.

Jul. 2014 – Jan. 2019: Head of the Coastal Processes and Engineering Laboratory, Instituto de Ingeniería (Sisal Unit), Universidad Nacional Autónoma de México.

Sep 2009 – Jul. 2014: Assistant Professor, Instituto de Ingeniería, Universidad Nacional Autónoma de México.

Aug. 2008 - Aug. 2009: Postdoctoral Researcher, Department of Civil and Environmental Engineering, University of Delaware.

Jan. 2008 - Aug. 2008: Postdoctoral Associate, Department of Civil and Coastal Engineering, University of Florida.

PUBLICATIONS (45)

Total Citations: 901

h-index: 18 (h-index: 16 since 2015)

i10-index: 22 (i10-index: 22 since 2015)

1. Baldock, T. & **Torres-Freyermuth, A.** (2020). Numerical study of the flow structure at a swash tip propagating over a rough bed. *Coastal Engineering*, 103729; Impact Factor: 4.119; <https://doi.org/10.1016/j.coastaleng.2020.103729>
2. Allende-Arandía, M.E., Zavala-Hidalgo, J., **Torres-Freyermuth, A.**, Appendini, C.M., Cerezo-Mota, R. & Taylor-Espinosa, N. (2020). Sea-land breeze diurnal component and its interaction with a cold front on the coast of Sisal, Yucatan: A case study. *Atmospheric Research*, 244, 101051; Impact Factor: 4.676; <https://doi.org/10.1016/j.atmosres.2020.105051>
3. Palemón-Arcos, L., **Torres-Freyermuth, A.**, et al. (2020). Numerical assessment of Tsunami-Structure Interaction (Guerrero, Mexico). *Journal of Coastal Research*, 36(3): 487-497; Impact Factor: 1.053; <https://doi.org/10.2112/JCOASTRES-D-19-00151.1>
4. Roberts Briggs, T., Figlus, J., **Torres-Freyermuth, A.**, Puleo, J.A., Warren, W. & Alrushaid, T. (2020). Variability in onshore sediment transport on a natural beach during a central American cold surge event. *Journal of Coastal Research*, 36(3): 487-497; Impact Factor: 1.053; <https://doi.org/10.2112/JCOASTRES-D-19-00146.1>
5. Puleo, J.A., Cristaudo, D., **Torres-Freyermuth, A.**, Masselink, G. & Shi, F. (2020). The role of alongshore flows on inner surf and swash zone hydrodynamics on a dissipative beach. *Continental Shelf Research*, 201, 104134; Impact Factor: 2.42; <https://doi.org/10.1016/j.csr.2020.104134>
6. **Torres-Freyermuth, A.**, Hofman, A., Tuz-Pech, J.C., Medellín, G. & Roos, P.C. (2020). Design and performance of permeable groins on a low-energy natural beach. *Journal of Marine Science and Engineering*, 8(4), 283; Impact Factor: 2.033; <https://doi.org/10.3390/jmse8040283>

7. Rey, W., Salles P., **Torres-Freyermuth, A.**, Ruiz-Salcines, P., Teng, Y.-C., Appendini, C. m., Quintero-Ibañez, J. (2020). Spatiotemporal Storm Impact on the Northern Yucatan coast during Hurricanes and Central American Cold Surge Events. *Journal of Marine Science and Engineering*. 8(1), 2. FI: 1.732.
8. **Torres-Freyermuth, A.**, Pintado-Patiño, J. C., Pedrozo-Acuña, A., Puleo, J. A., Baldock, T. E. (2019). Runup uncertainty on planar beaches. *Ocean Dynamics*, 69 (11-12): 1359-1371; <https://doi.org/10.1007/s10236-019-01305-y>. FI:1.869.
9. Ruiz-Salcines, P., Salles P., Robles-Díaz, L., Díaz-Hernández, G., **Torres-Freyermuth, A.**, Appendini, C. M. (2019). On the use of parametric models for wind wave modeling under tropical cyclones. *Water*, 11(10), 2044; <https://doi.org/10.3390/w11102044>. FI: 2.524.
10. Medellín, G., **Torres-Freyermuth, A.** (2019). Morphodynamics along a micro-tidal sea breeze dominated beach in the vicinity of coastal structures. *Marine Geology*, 417, 106013. FI: 3.349.
11. **Torres-Freyermuth, A.**, G. Medellín, E. T. Mendoza, E. Ojeda & P. Salles. (2019) Morphodynamic response to Low-Crested Detached-Breakwater on a sea-breeze dominated coast, *Water*, 11(4), 635; doi:10.3390/w11040635.
12. Medellín, G., **A. Torres-Freyermuth**, G. R. Tomasicchio, A. Francone, P. A. Tereskiewicz, L. Lusito, L. Palemón-Arcos, & J. López. (2018) Field and numerical study of resistance and resilience on a sea breeze dominated beach in Yucatan (Mexico), *Water*, 10, 1806; doi:10.3390/w10121806.
13. Rey, W., P. Salles, E. T. Mendoza, **A. Torres-Freyermuth**, & C. M. Appendini. (2018) Assessment of coastal flooding and associated hydrodynamic processes on the south-eastern coast of Mexico, during Central American cold surge events. *Natural Hazards and Earth System Sciences*, 18, 1681-1701. doi: 10.5194/nhess-18-1681-2018.
14. ***Franklin, G. L., **A. Torres-Freyermuth**, G. Medellín, M. E. Allende-Arandía & C. M. Appendini. (2018) On the role of the reef-dune system in coastal protection in Puerto Morelos (México), *Natural Hazards and Earth System Sciences*, 18, 1247-1260. doi: 10.5194/nhess-18-1247-2018.
15. **Palemón-Arcos, L., **A. Torres-Freyermuth**, G. Medellín, C. M. Appendini, J. A. Alvarez-Arellano, Y. Gutiérrez-Can, H. Alvarado-Vigil, & M. A. Hernández-Hernández. (2018) Wave-structure interaction study for the assessment of service life in coastal structures, *Tecnología y Ciencias del Agua*. 9(4), 1-24, DOI:HTTPS://DOI.ORG/10.24850/J-TYCA-2018-04-01..
16. **Torres-Freyermuth, A.**, J. A. Puleo, N. D. DiCosmo, M. E. Allende-Arandía, P. Chardón-Maldonado, J. López, B. Figueroa-Espinoza, A. Ruiz de Alegría-Arzaburu, J. Figlus, T. M. Roberts Briggs, J. De la Roza & J. Candela. (2017) Nearshore circulation on a sea breeze dominated beach during intense wind events, *Continental Shelf Research*, 151: 40-52. ISSN: 0278-4343, Factor de Impacto: 2.064.
17. **Torres-Freyermuth, A.**, M. Brocchini, S. Corvaro & **J. C. Pintado-Patiño. (2017) Wave attenuation over porous seabeds: A numerical study, *Ocean Modelling*, 117: 28-40. Factor de Impacto: 3.341.
18. Appendini, C.M., A. Pedrozo-Acuña, R. Padilla, **A. Torres-Freyermuth**, R. Cerezo-Mota, J. López & P. Ruiz. (2017) On the role of climate change on wind waves generated by tropical cyclones in the Gulf of Mexico, *Coastal Engineering Journal*, 59, 1740001. Factor de impacto: 0.887.
19. Briganti, R., **A. Torres-Freyermuth**, T. E. Baldock, M. Brocchini, N. Dodd, T.-J. Hsu, Z. Jiang, Y. Kim, **J. C. Pintado-Patiño, & M. Postacchini. (2016) Advances in numerical modeling of swash zone dynamics, *Coastal Engineering*. 115, 26-41, ISSN: 0378-3839, Factor de impacto: 3.221.

20. Puleo, J. & **A. Torres-Freyermuth** (2016). The second international workshop on swash-zone processes, *Coastal Engineering*, <http://dx.doi.org/10.1016/j.coastaleng.2015.09.007>, 115, 1-7. ISSN: 0378-3839, Factor de impacto: 3.221.
21. Medellín, G., J. Brinkkemper, **A. Torres-Freyermuth**, C. Appendini, T. Mendoza, & P. Salles. (2016) Runup parameterization and beach vulnerability assessment on a barrier island: A downscaling approach, *Natural Hazards and Earth System Sciences*, 16, 167-180, www.nat-hazards-earth-syst-sci.net/16/167/2016/ doi:10.5194/nhess-16-167-2016, ISSN: 1561-8633, Factor de impacto: 2.510.
22. **Palemón-Arcos, L., **A. Torres-Freyermuth**, A. Pedrozo-Acuña & P. Salles (2015). On the role of uncertainty in wave-structure interaction, *Coastal Engineering*, 106(12): 32-41, <http://dx.doi.org/10.1016/j.coastaleng.2015.09.005>, ISSN: 0378-3839, Factor de impacto: 3.221.
23. **Pintado-Patiño, J. C., **A. Torres-Freyermuth**, J. A. Puleo & D. Pokrajac (2015) On the role of infiltration and exfiltration in swash zone boundary layer dynamics, *Journal of Geophysical Research: Oceans*, 120(9): 6329-6350, doi:10.1002/2015JC010806, ISSN: 0148-0227, <http://onlinelibrary.wiley.com/doi/10.1002/2015JC010806/full>, Factor de impacto: 2.93.
24. Appendini, C. M., C. P. Urbano-Latorre, B. Figueroa, C. J. Dagua-Paz, **A. Torres-Freyermuth** & P. Salles (2015). Wave energy potential assessment in the Caribbean Low Level Jet using wave hindcast information, *Applied Energy*, 137: 375-384, doi:10.1016/j.apenergy.2014.10.038, ISSN:0306-2619, <http://www.sciencedirect.com/science/article/pii/S0306261914010885>, Factor de impacto: 7.182.
25. **Torres-Freyermuth, A.** & T.-J. Hsu (2014). On the mechanisms of low-frequency wave attenuation by muddy seabeds, *Geophysical Research Letters*, 41 (8): 2870-2875, doi:10.1002/2014GL06008, AGU, <http://onlinelibrary.wiley.com/journal/10.1002/>, ISSN:0094-8276, Factor de impacto: 4.253.
26. Hsu, H.-C., **A. Torres-Freyermuth**, T.-J. Hsu, H.-H. Hwung & P.-C. Kao (2014). On dam-break wave propagation and its implication to sediment erosion, *Journal of Hydraulic Research*, 52(2): 205-218. doi: 10.1080/00221686.2013.857365, ISSN 0022-1686, Factor de impacto: 1.268. <http://www.tandfonline.com/doi/full/10.1080/00221686.2013.857365#.U3oeNv1500c>.
27. **Hsu, W. Y., R. Y. Yang, T.-J. Hsu, **A. Torres-Freyermuth** & H. H. Hwung (2014) Boundary Layer Structure Under Wave-Mud Interactions, *International Journal of Offshore and Polar Engineering*, 24(4): 247-252, ISSN: 1053-5381 Factor de impacto: 0.341.
28. Appendini, C. M., **A. Torres-Freyermuth**, P. Salles, J. López-González & E. T. Mendoza (2014). Wave climate and trends for the Gulf of Mexico and Caribbean Sea: A 30-Yr wave hindcast, *Journal of Climate*, 27: 1619-1632, doi:10.1175/JCLI-D-13-00206.1, AMS, ISSN 0894-8755, Factor de impacto: 4.161. <http://journals.ametsoc.org/loi/clim>
29. **Franklin, G.L., I. Mariño-Tapia & **A. Torres-Freyermuth** (2013). Effects of reef roughness on wave setup and surf zone currents. In: Conley, D.C., Masselink, G., Russell, P.E. and O'Hare, *Journal of Coastal Research*, Special Issue No. 65, ISSN 0749-0208, Factor de impacto: 0.915. <http://www.jronline.org/>
30. Mendoza, E.T., *M. A. Trejo-Rangel, P. Salles, C. M. Appendini, J. Lopez-Gonzalez & **A. Torres-Freyermuth**, (2013). Storm characterization and coastal vulnerability in the Yucatan Peninsula, *Journal of Coastal Research*, Special Issue No. 65, ISSN 0749-0208, Factor de impacto: 0.915. <http://www.jronline.org/>
31. **Hsu, W. Y., H. H. Hwung, T.-J. Hsu, **A. Torres-Freyermuth** & R. Y. Yang (2013) An experimental and numerical investigation on wave-mud interactions, *Journal of Geophysical*

- Research: Oceans*, 118 (3): 1126-1141, doi:10.1002/jgrc.20103, ISSN: 0148-0227, Factor de impacto: 2.93. [http://onlinelibrary.wiley.com/journal/10.1002/\(ISSN\)2169-9291](http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)2169-9291)
32. **Torres-Freyermuth, A.**, J. A. Puleo & D. Pokrajac (2013) Modelling swash-zone hydrodynamics and shear stresses on planar slopes using Reynolds-Averaged Navier-Stokes equations, *Journal of Geophysical Research: Oceans*, 118(2): 1019-1033, doi:10.1002/jgrc.20074, ISSN: 0148-0227,, Factor de impacto: 2.93. [http://onlinelibrary.wiley.com/journal/10.1002/\(ISSN\)2169-9291](http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)2169-9291) .
 33. Li, M.-S., Y.-Y. Chen, H.-C. Hsu & **A. Torres-Freyermuth** (2013) Experimental and Lagrangian modelling of nonlinear water waves propagation on a sloping bottom, *Ocean Engineering*, 64(15): 36-48, ISSN: 0029-8018, Factor de impacto: 1.894. <http://www.journals.elsevier.com/coastal-engineering/>
 34. Appendini, C. M., **A. Torres-Freyermuth**, F. Oropeza, P. Salles, J. López, & E. T. Mendoza (2013) Wave modeling performance in the Gulf of Mexico and Western Caribbean: wind reanalyses assessment, *Applied Ocean Research*, 39: 20-30, ISSN: 0141-1187, Factor de impacto: 1.596. <http://www.journals.elsevier.com/applied-ocean-research/>
 35. **Torres-Freyermuth, A.**, I. Mariño-Tapia, C. Coronado, P. Salles, G. Medellín, A. Pedrozo-Acuña, R. Silva, J. Candela & R. Iglesias-Prieto (2012) Wave-induced extreme water levels in the Puerto Morelos fringing reef lagoon, *Nat. Hazards Earth Syst. Sci.*, 12, 3765-3773, doi:10.5194/nhess-12-3765-2012, ISSN: 1561-8633, Factor de impacto: 2.510. <http://www.nat-hazards-earth-syst-sci.net/12/3765/2012/nhess-12-3765-2012.html>
 36. Appendini, C. M., P. Salles, E. T. Mendoza, J. López, & **A. Torres-Freyermuth** (2012) Longshore Sediment Transport on the Northern Coast of the Yucantan Peninsula. *Journal of Coastal Research*, 28(6): 1404-1417, ISSN 0749-0208, Factor de impacto: 0.915. <http://www.jcronline.org/>
 37. Pedrozo-Acuña, A., **A. Torres-Freyermuth**, A. Ruiz de Alegría, E. Mendoza, & R. Silva (2012), Momentum balance under breaking waves: Closure to discussion by T. E. Baldock of "Laboratory investigation of pressure gradients induced by plunging breakers", *Coastal Engineering*, 58(8): 722-738, ISSN: 0378-3839, Factor de impacto: 3.221. <http://www.journals.elsevier.com/coastal-engineering/>
 38. **Rivillas-Ospina, G., A. Pedrozo-Acuña, R. Silva, **A. Torres-Freyermuth** & C. Gutierrez (2012), Estimation of the velocity field induced by plunging breakers in the surf and swash zones, *Experiments in Fluids*, 52(1): 53-68, ISSN: 0723-4864, Factor de impacto: 1.832. <http://link.springer.com/journal/348>
 39. Pedrozo-Acuña, A., A. Ruiz de Alegría, **A. Torres-Freyermuth**, E. Mendoza & R. Silva (2011), Laboratory investigation of pressure gradients induced by plunging breakers, *Coastal Engineering*, 58(8): 722-738, ISSN: 0378-3839, Factor de impacto: 3.221. <http://www.journals.elsevier.com/coastal-engineering/>
 40. Pedrozo-Acuña, A. & **A. Torres-Freyermuth** (2011), Sobre el uso de las ecuaciones de Navier-Stokes con el promedio de Reynolds en el campo de la ingeniería de costas, *Tecnología y Ciencias del Agua*, vol. II (2): 51-67, ISSN: 0187-8336, Impact Factor: 0.096. <https://www.imta.gob.mx/tyca/>
 41. **Torres-Freyermuth, A.** & T.-J. Hsu (2010), On the dynamics of wave-mud interaction: a numerical study, *Journal of Geophysical Research: Oceans*, 115, C07014, doi:10.1029/2009JC005552, ISSN: 0148-0227, Impact Factor: 2.93. [http://onlinelibrary.wiley.com/journal/10.1002/\(ISSN\)2169-9291](http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)2169-9291).
 42. **Torres-Freyermuth, A.**, J.L. Lara & I.J. Losada (2010), Numerical modelling of short- and long-wave transformation on a barred beach, *Coastal Engineering*, 57(3): 317-330, ISSN: 0378-3839, Factor de impacto: 3.221. <http://www.journals.elsevier.com/coastal-engineering/>
 43. Pedrozo-Acuña, A., **A. Torres-Freyermuth**, Q. Zou, T.-J. Hsu & D. E. Reeve (2010), Diagnostic investigation of impulsive pressure induced by plunging breakers impinging on

- gravel beaches, *Coastal Engineering*, 57(3): 252-266, ISSN: 0378-3839, Factor de impacto: 3.221. <http://www.journals.elsevier.com/coastal-engineering/>
44. **Torres, A. & R. Silva** (2008), A depth estimation system for laboratory studies using video imagery, *American Journal of Environmental Sciences*, 4 (3): 229-237, ISSN: 1553-3910, Factor de impacto: 0.56. <http://thescipub.com/journals/ajes>.
45. **Torres-Freyermuth, A., I.J. Losada & J.L. Lara** (2007), Modeling of surf zone processes on a natural beach using Reynolds-Averaged Navier-Stokes equations, *Journal of Geophysical Research: Oceans*, 112, C09014, doi:10.1029/2006JC004050, ISSN: 0148-0227, Factor de impacto: 2.93. [http://onlinelibrary.wiley.com/journal/10.1002/\(ISSN\)2169-9291](http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)2169-9291).

SYNERGISTIC ACTIVITIES

- Associate Editor for *Geofísica Internacional* (2019-).
- Co-organizer for 2nd (Newark, DE 2014) International Workshops on Swash-Zone Processes.
- Organizer for the 2018 Young Coastal Scientists and Engineers Conference –Americas (YCSECA).
- Reviewer for *Coastal Engineering* (Elsevier), *Coastal Engineering Journal* (Taylor and Francis), *Continental Shelf Research* (Elsevier), *Coral Reefs* (Springer), *Frontiers in Marine Science* (frontiers), *Journal of Coastal Research* (CERF), *Journal of Geophysical Research* (Wiley), *Environmental Modelling and Software* (Elsevier), *Estuarine, Coastal and Shelf Science* (Elsevier), *Geophysical Research Letters* (Wiley), *Natural Hazards, Earth and System Sciences* (Copernicus), *Stochastic Environmental Research* (Springer), *Water Resources Research* (Wiley), *Ocean Modelling* (Elsevier), *Journal of Fluid Mechanics* (Cambridge University Press), *Regional Studies in Marine Sciences* (Elsevier).