

Curriculum Vitae

1. Personal Information

Giovanni Coco
Associate Professor

2. Academic Qualifications

- Ph.D. 2000, Physical Oceanography, Institute of Marine Studies, University of Plymouth, U.K.
- B.S. in Civil/Hydraulic Engineering (with honours, undergraduate thesis) 1995, University of Catania, Italy.

3. Employment History

- Associate Professor, co-director of Hazard Hub, University of Auckland, New Zealand, 2015-present
- AGL Excellence Fellow, IH Cantabria, University of Cantabria, Santander, Spain. 2011-2014
- Coastal Scientist, National Institute of Water and Atmospheric Research, Hamilton, New Zealand. 2003-2011.
- Post-doctoral Researcher, Complex System Laboratory, Cecil and Ida Green Institute of Geophysics and Planetary Physics, University of California – San Diego, U.S.A., 2000-2003.
- Post-doctoral Researcher, Institute of Marine Studies, University of Plymouth, U.K. 1999-2000.
- Contract Researcher, Institute of Hydraulic, Hydrology and Water Management, University of Catania, Italy 1995-1996.

4. Distinctions

- Honours & Awards
 - Honorary Lectureship at University of Waikato, New Zealand, 2006-2013.
 - Riley Memorial Lecture, Dalhousie University, Canada, 2013
 - Best Oral Presentation at the International Coastal Symposium 2013, Plymouth, UK.
 - Invited visiting scientist at University of Bordeaux (France), April-August 2010
 - Invited visiting professor at Hohai University (China), May 2014
 - Session chair at various international conferences (ICCE, RCEM, CD).
 - Bonino-Puleio Prize for best undergraduate thesis, 1996
 - Cum Laude distinction, University of Catania, 1995.
- International Committees
 - Scientific Committee of River, Coastal and Estuarine Morphodynamics, 2009-present.
 - Steering Committee of the International Symposium of Rip Currents, 2010-present.
 - Executive Committee of the Earth and Planetary Surface Processes Focus Group, AGU, 2015-present
 - Committee of “Estuary Day” (biannual workshop), 2012-present.
- Editorial boards
 - Editor of *Journal of Geophysical Research – Earth Surface*, AGU, 2015-present.
 - Associate Editor of *ESurf*, EGU, 2013 – 2015.
 - Associate Editor of *Journal of Geophysical Research – Earth Surface*, AGU, 2008 – 2013.
 - Invited editorial board of a thematic issue of the *Journal of Integrated Coastal Management* on “Estuarine and Coastal Morphodynamics”, 2015.
- Keynotes/Invited Conference presentations:

- “Biomorphodynamics of estuarine systems”, International Coastal Symposium, March 2016, Sydney, Australia.
 - “Modelling pattern formation in the nearshore”, 2nd Conference on Coastal and Estuarine Morphodynamics, May 2013, Aveiro, Portugal.
 - “Cause and Effect in Geomorphic Systems: Complex-Systems Perspectives”, European Geophysical Union, April 2012, Wien, Austria.
 - “How do bedforms respond to changing conditions? A study using abstracted models”, Coastal Dynamics, Tokyo, Japan (co-keynote speaker), 2010
 - “Patterns in the Sand”, Binghamton Symposium, North Carolina, USA, 2008
 - “Abstracted Modelling as a Tool for Understanding and Predicting Coastal Morphodynamics”, International Coastal Symposium, Sao Paulo, Brazil (co-keynote speaker), 2005
- Short Courses Organized
 - “Self-organized morphodynamic patterns in the nearshore, Coastal Dynamics 2013, Arcachon, France.
 - “Managing Natural Hazards”, 2004 and 2006, Hamilton, New Zealand.
- International Conferences & Workshops Organized
 - Co-chair of “Estuary Day Workshop”, Nanjing, China, 2015
 - Chair of River Coastal and Estuarine Morphodynamics RCEM 2013, Santander, Spain
 - Co-chair of the “Long Wave and Runup Workshop”, Santander 2012
 - Local Organizing Committee of the International Conference on Coastal Engineering (ICCE) 2012
 - Local Organizing Committee of the “Limnologia 2014” Conference, Santander, 2014
- Invited Presentations at International Workshops/Conferences:
 - International Workshop on “Frontiers of Estuarine and Coastal Research”, SKLEC, Shanghai, China, 2015
 - International Workshop on “Infragravity waves and seismic hum”, Brest, France, 2015
 - iCOASST Workshop, University of Southampton, 2013
 - American Geophysical Union (Fall Meeting) 2012
 - International Workshop on Linear Stability Analysis, Spain, 27-29 January, 2010
 - “Coastal Hazards in New Zealand”, Coasts and Cities, Florida, USA, 2009
 - International Workshop on Mixed Sediments, The Netherlands, 14 September, 2007
 - Euromech 395: Coastal, Estuarine and River Forms, The Netherlands, 2–4 June, 1999.
- Other Invited Presentations:
 - Hohai University, China, 16 May, 2014
 - University of Florida, USA, 4 September, 2013
 - HR Wallingford, UK, 3 October, 2012
 - University of Southampton, UK, 2 October, 2012
 - University of Grenoble, France, 25 November, 2011
 - University of Bordeaux, France, 14 May, 2010
 - Auckland Technical University, New Zealand, 30 March, 2009
 - Bureau de Recherches Géologiques et Minières (BRGM), France, 18 December, 2008
 - University of South Florida, USA, 14 November, 2008
 - University of East Anglia, UK, 30 June 2007
 - University of Auckland, New Zealand, 10 October 2006
 - Water Research Laboratory, University of New South Wales, Australia, 18 April 2006
 - Center for Applied Coastal Research, University of Delaware, U.S.A., 10 March, 2005.

- Division of Earth and Ocean Sciences, Duke University, U.S.A., 21 September, 2003.
- Institute of Marine Studies, University of Utrecht, The Netherlands, 17 January, 2003.
- Institute of Marine, Barcelona, Spain, 11 October, 2002.
- Environmental Fluid Dynamics Summer School, Vilanova, Spain, 19 July, 2002.
- Department of Applied Ocean Physics and Engineering, Woods Hole Oceanographic Institution, U.S.A., 30 June 1999.
- Department of Applied Physics, Universitat de Catalunya, Barcelona, 25 November, 1998.
- Journal Reviewer for: Advances in Water Research, Coastal Engineering, Computers & Geosciences, Continental Shelf Research, Earth Surface Processes and Landforms, Geology, Geomorphology, Geophysical Research Letters, Journal of Coastal Research, Journal of Fluid Mechanics, Journal of Geophysical Research – Oceans, Journal of Geophysical Research – Earth Surface, Journal of Integrated Coastal Zone Management, Journal of Marine Systems, Journal of Ocean Engineering, Marine Geology, Mathematical Geology, Natural Hazards and Earth System Science, Nature, Nonlinear Processes in Geophysics, Progress in Oceanography, Ocean Dynamics.
- Proposal Reviewer for institutions in Australia, the Netherlands, Israel, Italy, the USA and the UK.
- In the media/news
 - Interview on rip currents on national show “Our changing world” (RadioNZ, June 16th 2011)
 - Interview on rip currents on national newspaper (NZ Herald, January 22nd 2012)
 - Interview on estuarine biomorphodynamics (Diario Montanes, January 30th 2012)
 - Interview on hydrodynamic laboratory experiments (Diario Montanes, April 18th 2014)
 - Interview for TV documentary “Baños con prudencia y sin riesgos: el mejor consejo para un buen verano” (Antena 3 TV, 2014)

5. Research

- Research activities
 - Ongoing collaborations
 - Surf and swash zone processes: Dr. K. Bryan (Waikato University, New Zealand), Prof. R.T. Guza (Scripps Institution of Oceanography, USA).
 - Biogeomorphology in estuarine systems: Dr. A. D’Alpaos (Padua University, Italy)
 - Complexity: Prof. A.B. Murray (Duke University, USA)
 - Ecology: Dr. J. Hewitt (NIWA, New Zealand)
 - Numerical modelling: Dr. D. Calvete (Universitat Politecnica de Catalunya, Spain)
 - Nearshore and estuarine morphodynamics: Prof. I. Townend (University of Southampton, UK), Dr. M. Olabarrieta (University of Florida, USA)
 - External Research Funding

Date/Country	Project	Sponsor	Euros (or equivalent)
2015 EU	Splitting nature at its seams: morphodynamic stability of river and tidal bifurcations (co-PI)	University of Auckland	NA
2015 New Zealand	Climatic effects on coastal hazard impacts (PI)	University of Auckland	1,000,000
2015 New Zealand	Establishment of the National Hazard Centre (NHC) at the university of Auckland	University of Auckland	100,000
2015 New Zealand	On the Morphodynamics of Estuarine Environments (PI)	University of Auckland	20,000
2014 France	PITS" - "Structures morphosédimentaires en domaine littoral et côtier (PI)	ANR (France)	400,000 (declined)

2013 USA	River Coastal Estuarine Morphodynamics (PI)	USA Office of Naval Research Global	11,300
2013-2014 Spain	Laboratory and numerical study of hydro- and morphodynamics in natural and artificial beaches (PI)	Ministerio de Economía y Competitividad	117,000
2011-2014 Spain	Biomorphodynamics of tidal networks (PI)	University of Cantabria	100,000 plus 2 2-years post-docs and 1 PhD student
2008-2016 New Zealand	Reduced exposure to Coastal Erosion (PI)	FRST	233,000 per year
2010 New Zealand	Dynamics of rip currents on embayed beaches (PI)	International Science and Technology Grant (ISAT)	1,700
2010 France	Analysis of wave runup and wave setup during storm conditions (PI)	French Embassy in NZ	1,000
2010 France	PhD support, (co-PI)	French Navy	90,00
2010 Spain	Linear stability analysis workshop (PI)	Universitat Politècnica de Catalunya	1,600
2010-2013 France	Role of morphological interactions on barred beaches (co-PI)	Agence Nationale de la Recherche	480,000
2009 New Zealand	Video-monitoring system at Tairua (PI)	Environment Waikato	18,080
2008-2011 New Zealand	PhD support (B. van Maanen), (PI)	NIWA contestable fund	120,000
2008 New Zealand	Video-monitoring system at Dunedin (PI)	Dunedin City Council	14,820
2008 New Zealand	Video-monitoring system for ECORS experiment (PI)	French Navy	17,960
2008 USA	Complexity and Geomorphology	National Science Foundation	1,500
2004-2008 New Zealand	Coastal Dynamics (PI)	FRST	233,000 per year
2007-2008 New Zealand	Video-monitoring system at Raglan (PI)	Environment Waikato	21,000
2007 Netherlands	Mixed sediments workshop (PI)	Utrecht University	2,200
2006 New Zealand	Review of commercial report (PI)	MetOcean	3,600
2006 France	Video-monitoring system at Biscarrosse (PI)	University of Bordeaux	38,000
2005 New Zealand	Estuarine evolution and video-monitoring	NIWA contestable fund	15,000
2005-2006 UK	Video-monitoring system at Seapall (PI)	University of East Anglia	16,500
2004 New Zealand	Dynamics of sediment mixtures (PI)	International Science and Technology Grant (ISAT)	3,200
2004 New Zealand	Hot spots and rip currents (PI)	NIWA contestable fund	25,000
2002-2003 USA	Hierarchical models of the nearshore complex system (co-PI)	Office of Naval Research	300,000

- Publications

- Books

1. “Coastal storms on sandy beaches” edited by Ciavola P. and Coco G., Wiley and Sons, contract signed, to appear in 2016
2. “Proceedings of River, Coastal and Estuarine Morphodynamics”, edited by Coco G. and Metivier F., 2014, EGU, Copernicus Publications.
3. “Frontiers in River, Coastal and Estuarine Morphodynamics”, Earth Surface Processes, edited by Coco G. and Metivier F., 2014, EGU, Copernicus Publications.

- Book Chapters
 1. Beach Cusps in “Atlas of Bedforms in the Western Mediterranean. Editors: Guillén, J., Acosta, J., Chiocci, F.L., Palanques, A. (Eds.), Springer
 2. Self-organization and Bedforms in “Atlas of Bedforms in the Western Mediterranean. Editors: Guillén, J., Acosta, J., Chiocci, F.L., Palanques, A. (Eds.), Springer.

- Journal Articles (Peer-reviewed)
 1. Tinoco, R. and Coco, G., 2016, A laboratory study on sediment resuspension within arrays of rigid cylinders, *Advances in Water Resources*, doi:10.1016/j.advwatres.2016.04.003.
 2. Zhou, Z., van der Wegen, M., Jagers, B., and Coco, G., 2016, Modelling the role of self-weight consolidation on the morphodynamics of accretional mudflats, *Environmental Modelling and Software*, 76, 167-181.
 3. Zhou, Z., Q. Ye, and Coco, G., 2016, A one-dimensional biomorphodynamic model of tidal flats: Sediment sorting, marsh distribution and carbon accumulation under sea level rise, *Advances in Water Resources*, doi:10.1016/j.advwatres.2015.10.011.
 4. Kakeh, N., Marani, M., and Coco, G., 2016, On the morphodynamic stability of intertidal environments and the role of vegetation, *Advances in Water Resources*, doi:10.1016/j.advwatres.2015.11.003.
 5. Bolla Pittaluga, M., Coco, G., and Kleinhans, M.G., 2015, Channel bifurcations in gravel- and sand-bed rivers and deltas, *Geophysical Research Letters*, doi: 10.1002/2015GL065175.
 6. van Maanen, B., Coco, G., Bryan, K.R., On the ecogeomorphological feedbacks that control tidal channel network evolution in a sandy mangrove setting, *Proceedings of the Royal Society A*, Vol. 471, No. 2180, p. 20150115.
 7. Zhou, Z., Coco, G., van der Wegen, M., Gong, Z., Zhang, C., & Townend, I., 2015, Modeling sorting dynamics of cohesive and non-cohesive sediments on intertidal flats under the effect of tides and wind waves. *Continental Shelf Research*, 104, 76-91, doi:10.1016/j.csr.2015.05.010.
 8. Simarro, G., Bryan, K. R., Guedes, R. M., Sancho, A., Guillen, J., and Coco, G., 2015, On the use of variance images for runup and shoreline detection. *Coastal Engineering*, doi:10.1016/j.coastaleng.2015.03.002.
 9. Goldstein, E., and Coco, G., 2015, Machine learning components in deterministic models: hybrid synergy in the age of data, *Frontiers in Environmental Science*, doi: 10.3389/fenvs.2015.00033.
 10. Tinoco, R., Goldstein, E., and Coco, G., 2015, A data-driven approach to develop physically sound predictors: Application to depth-averaged velocities on flows through submerged arrays of rigid cylinders, *Water Resource Research*, doi: 10.1002/2014WR016380.
 11. Senechal, N., Coco, G., Castelle, B., 2015, Storm impact on the seasonal shoreline dynamics of a meso- to macrotidal open sandy beach (Biscarrosse, France), *Geomorphology*, 228, 448-461.
 12. Zhou, Z., Coco, G., Jiménez, M., Olabarrieta, M., van der Wegen M., and Townend I., 2014, Morphodynamics of river-influenced back-barrier tidal basins: The role of landscape and hydrodynamic settings. *Water Resource Research*, doi: 10.1002/2014WR015891.
 13. Jiménez, M., Castanedo, S., Zhou, Z., Coco, G., Medina, R., and Rodriguez-Iturbe, I., 2014. Scaling properties of tidal networks. *Water Resources Research*, 50, 4585–4602, doi:10.1002/2013WR015006.

14. Zhou, Z., Olabarrieta, M., Stefanon, L., D'Alpaos, A., Carniello, L. and Coco, G., 2014, A comparative study of physical and numerical modelling of tidal network ontogeny, *Journal of Geophysical Research*, 119, doi:10.1002/2014JF003092.
15. Goldstein, E. and Coco, G., 2014, A machine learning approach for the prediction of settling velocity, *Water Resources Research*, doi: 10.1002/2013WR015116.
16. Tinoco, R. and Coco, G., 2014, Observations of the effect of emergent vegetation on sediment resuspension under unidirectional currents and waves, *Earth Surf. Dynam.*, 2, 83-96, doi:10.5194/esurf-2-83-2014, 2014.
17. Zhou, Z., Stefanon, L., Olabarrieta, M., D'Alpaos, A., Carniello, L., and Coco, G., 2014, Analysis of the drainage density of experimental and modelled tidal networks, *Earth Surf. Dynam.*, 2, 105-116, doi:10.5194/esurf-2-105-2014.
18. Goldstein, E.B., Coco, G., Murray, A.B. and Green, M.O., 2014, Data driven components in a model of inner shelf sorted bedforms: a new hybrid model, *Earth Surf. Dynam.*, 2, 67-82, doi:10.5194/esurf-2-67-2014.
19. Green, M.O., and Coco, G., 2014, Review of wave-driven sediment resuspension and transport in estuaries, *Review of Geophysics*, 52, doi:10.1002/2013RG000437.
20. Murray, A.B., Goldstein, E., and Coco, G., 2014, Cause and Effect in Geomorphic Systems: Complex-Systems Perspectives, *Geomorphology*, 219, 1-9.
21. Murray, A.B., Coco, G., and Goldstein, E., 2014, The Shape of Patterns to Come: From Initial Formation to Long-Term Evolution, *Estuarine, Coastal and Shelf Science*, doi: 10.1002/esp.3487DOI: 10.1002/esp.3487
22. Goldstein, E., Coco, G., and Murray, A.B., 2014, Prediction of wave ripple characteristics using genetic programming, *Continental Shelf Research*, 71, 1-15.
23. Coco, G., Senechal, N., Rejas, A., Bryan, K.R., Capo, S., Parisot, J.P., Brown, J.A., MacMahan, J.H.M., 2014, Beach response to a sequence of extreme storms, *Geomorphology*, 204, 493-501.
24. van Maanen, B., Coco, G., Bryan, K.R., and Friedrichs, C.T., 2013, The effect of sea-level rise on the morphodynamic evolution of tidal embayments, *Ocean Dynamics*, doi 10.1007/s10236-013-0649-6.
25. Turki, I., Medina, R., Gonzalez, M., and Coco, G., 2013, An equilibrium model to predict shoreline rotation of pocket beaches, *Marine Geology*, doi: 10.1016/j.margeo.2013.08.002
26. Coco, G. Zhou, Z., van Maanen, B., Olabarrieta, M., Tinoco, R., and Townend, I., 2013, Morphodynamics of tidal networks: advances and challenges, *Marine Geology* (invited paper), 346(3), 1–16.
27. van de Lageweg, W.I., Bryan, K.R., Coco, G., and Ruessink, B.G., 2013, Observations of shoreline-sandbar coupling on an embayed beach, *Marine Geology*, 344, 101-114.
28. Guedes, R., Bryan, K.R., and Coco, G., 2013, Observations of linear and nonlinear wave interactions on the cross-shore structure of infragravity energy fluxes and infragravity swash motions, *Journal of Geophysical Research*, doi: 10.1002/jgrc.20267
29. Castelle, B., and Coco, G., 2013, Surf zone flushing on embayed beaches, *Geophysical Research Letters*, 40, 1–5, doi:10.1002/grl.50485.
30. van Maanen, B., Coco, G., and Bryan, K.R., 2013, Modelling the effects of tidal range and initial bathymetry on the morphological evolution of tidal embayments, *Geomorphology*, 191, doi: 10.1016/j.geomorph.2013.02.023
31. Turki, I., Medina, R., Gonzalez, M., and Coco, G., 2012, Natural variability of shoreline position: observations at three pocket beaches, *Marine Geology*, doi: 10.1016/j.margeo.2012.10.007.

32. Guedes, R.M.C., Bryan, K.R., and Coco, G., 2012, Observations of alongshore variability of swash motions on an intermediate beach, *Continental Shelf Research*, 48, 61-74.
33. Oehler, F., Coco, G., Green, M.O., and Bryan, K.R., 2012, A data-driven approach to predict suspended-sediment reference concentration under non-breaking waves, *Continental Shelf Research*, 46, 96-106.
34. Stark, N., Coco, G., Bryan, K.R., and Kopf, A., 2012, In-situ geotechnical characterization of mixed-grainsize bedforms using a dynamics penetrometer, *Journal of Sedimentary Research*, 82, 540-544, doi: 10.2110/jsr.2012.45.
35. Castelle, B., and Coco, G., 2012, The morphodynamics of rip channels on embayed beaches, *Continental Shelf Research*, 43, 10-23.
36. Castelle, B., Marieu, V., Coco, G., Bonneton, P., Bruneau, N., Ruessink, B.G., 2012, On the impact of an offshore bathymetric anomaly on surfzone rip channels, *Journal of Geophysical Research*, 117, F01038, doi:10.1029/2011JF002141.
37. Goldstein, E.B., Murray, A.B., and Coco, G., 2011, Sorted Bedform Pattern Evolution: Persistence, Destruction and Self-Organized Intermittency, *Geophysical Research Letters*, 38, L24402, doi:10.1029/2011GL049732.
38. van Maanen, B., Coco, G., and Bryan, K.R., 2011, A numerical model to simulate the formation and subsequent of tidal channel networks, *Australian Journal of Civil Engineering*, 9(1), 61-72.
39. Huisman, C., Bryan, K.R., Coco, G., and Ruessink, B.G., 2011, The use of video imagery to analyse groundwater and shoreline dynamics on a dissipative beach, *Continental Shelf Research*, doi.org/10.1016/j.csr.2011.07.013.
40. Senechal, N., Coco, G., Bryan, K.R., Holman, R.A., 2011, Wave runup during extreme storm conditions, *Journal of Geophysical Research*, 116, C07032, doi:10.1029/2010JC006819.
41. Guedes, R.M.C., Bryan, K.R., Coco, G., and Holman, R.A., 2011, The effects of tides on swash statistics on an intermediate beach, *Journal of Geophysical Research*, 116, C04008, doi:10.1029/2010JC006660.
42. van Gaalen, J., S. Kruse, G. Coco, L. Collins, and T. Doering, 2011, Observations of beach cusp evolution at Melbourne Beach, Florida, USA, *Geomorphology*, 129, 131-140.
43. Stephens, S., Coco, G., and Bryan, K.R., 2011, Numerical simulations of wave setup over barred beach profiles: implications for predictability, *Journal of Waterway, Port, Coastal, and Ocean Engineering*, doi:10.1061/(ASCE)WW.1943-5460.0000076.
44. Gallop, S.L., Bryan, K.R., Coco, G., and Stephens, S., 2011, Storm-driven changes in rip-channel patterns on an embayed beach, *Geomorphology*, 127, 179-188.
45. Oehler, F., Rutherford, K., and Coco, G., 2010, The use of machine learning algorithms to develop a generalized simplified model to predict denitrification, *Biogeosciences*, 7, 3311-3332, doi:10.1594/bg-7-3311-2010.
46. Bryan, K.R. and Coco, G., 2010, Observations of nonlinear run-up patterns on plane and rhythmic beach morphology, *Journal of Geophysical Research*, 115, C09017, doi:10.1029/2009JC005721.
47. van Maanen, B., Coco, G., Bryan, K.R., and Ruessink, B.G., 2010, The use of artificial neural networks to analyze and predict alongshore sediment transport, *Nonlinear Processes in Geophysics*, 17, 395-404, doi:10.5194/npg-17-395-2010.
48. Lundquist, C., Coco, G., Thrush, S.F., and Hewitt, J.E., 2010, Interactions between disturbance and dispersal decrease persistence thresholds of a marine benthic community, *Marine Ecology Progress Series*, 413: 217-228

49. Thrush, S.F., Hewitt, J.E., Dayton, P.K., Coco, G., Lohrer, A.M., Norkko, A., Norkko, J., and Chiantore, M., 2009, Forecasting the limits of resilience: integrating empirical research with theory, *Proceedings of the Royal Society B*, 276, 3209-3217, doi: 10.1098/rspb.2009.0661.
50. van Gaalen, J.F., Kruse, S.E., Burroughs, S.M., and Coco, G., 2009, Time-Frequency Methods for Characterizing Cuspate Landforms in Lidar Data, *Journal of Coastal Research*, 25(5): 1143-1148.
51. Murray, A.B.; Lazarus, E.; Ashton, A.; Baas, A.; Coco, G.; Coulthard, T.; Fonstad, M.; Haff, P.; McNamara, D.; Paola, C.; Pelletier, J.; Reinhardt, L., 2009, Geomorphology, complexity, and the emerging science of the Earth's surface. *Geomorphology*, 103(3): 496–505.
52. van Maanen, B., Coco, G., Swales, A., and Bryan, K.R., 2008. The role of biomorphodynamics in estuarine evolution in New Zealand. *New Zealand Geographer*, 64, 162-164.
53. Almar, R., Coco, G., Bryan, K.R., Huntley, D.A., Short, A.D. and Senechal, N., 2008, Video observations of beach cusp morphodynamics, *Marine Geology*, 254, 216-223.
54. van Maanen, B., de Ruiter, P.J., Coco, G., Bryan, K.R., and Ruessink, B.G., 2008, Onshore sandbar migration at Tairua Beach (New Zealand): numerical simulations and field measurements, *Marine Geology*, 253, 99-106.
55. Thrush, S.T., Coco, G., and Hewitt, J.E., 2008, Complex positive connections between functional groups are revealed by neural network analysis of ecological time-series, *American Naturalist*, 171(5), 669-677.
56. Hume, A., Coco, G., and Green, M.O., 2008, Shifting sands – shifting paradigms, *Geographical Education*, 20, 30-41.
57. Huntley, D.A., Coco, G., Bryan, K.R., and Murray, A.B., 2008, Influence of “defects” on sorted bedform dynamics, *Geophysical Research Letters*, 35, L02601, doi:10.1029/2007GL030512.
58. Coco, G., and Murray, A.B., 2007, Patterns in the sand: from forcing templates to self-organization, *Geomorphology*, 91(3-4), 271-290.
59. Coco, G., Murray, A.B., Green, M.O., 2007, Sorted bedforms as self-organizing patterns. Part 1: model development, *Journal of Geophysical Research*, 112, F03015, doi:10.1029/2006JF000665.
60. Coco, G., Murray, A.B., Green, M.O., Hume, T., Thieler, R., 2007, Sorted bedforms as self-organizing patterns. Part 2: complex forcing scenarios, *Journal of Geophysical Research*, 112, F03016, doi:10.1029/2006JF000666.
61. Green, M.O., and Coco, G., 2007, Sediment transport on an estuarine intertidal flat: measurements and conceptual model of waves, rainfall and exchanges with a tidal creek, *Estuarine, Coastal and Shelf Science*, 72, 553-569.
62. Bryan, K.R., and Coco, G., 2007, Detecting nonlinearity in run-up on a natural beach, *Nonlinear Processes in Geophysics*, 14, 385-393.
63. Ruessink, B.G., Coco, G., Ranasinghe, R., and Turner, I.L., 2007, Coupled and noncoupled behavior of three-dimensional morphological patterns in a double sandbar system, *Journal of Geophysical Research*, 112(C7), 10.1029/2006JC003799.
64. Calvete, D., Coco, G., Falqués, A., Dodd, N., 2007, (Un)predictability in rip channel formation, *Geophysical Research Letters*, 34, L05605, doi:10.1029/2006GL028162.
65. Hume, A., Coco, G., Green, M.O., 2007, Shifting sands, *New Zealand Science Teacher Journal*, 114, 25-28.

66. Coco, G., Thrush, S.T., Green, M.O., and Hewitt, J.E., 2006, The role of feedbacks between bivalve (*Atrina zelandica*) density, flow and suspended sediment concentration on patch stable states, *Ecology*, 87(11), 2862-2870.
 67. Ciriano, Y., Coco, G., Bryan, K.R., and Elgar, S., 2005, Field observations of swash zone infragravity motions and beach cusp evolution, *Journal of Geophysical Research*, 110, C02018, doi: 10.1029/2004JC002485.
 68. Van Enckevort, I.M.J., Ruessink, B.G., Coco, G., Suzuki, K., Turner, I.L., Plant, N.G., and Holman, R.A., 2004, Observations of nearshore crescentic sandbars, *Journal of Geophysical Research*, 109(C06028), doi: 10.1029/2003JC002214.
 69. Masselink, G., Russell, P., Coco, G., and Huntley, D.A., 2004, Test of edge wave forcing during formation of rhythmic beach morphology, *Journal of Geophysical Research*, 109(C06003), doi: 10.1029/2004JC002339.
 70. Coco, G., Werner, B.T., Burnet, T., and Elgar, S., 2004, The role of tides in beach cusp formation, *Journal of Geophysical Research*, 109, CO4011, doi: 10.1029/2003JC002154.
 71. Coco, G., Werner, B.T., Burnet, T., and Elgar, S., 2003, Test of self-organization in beach cusp formation, *Journal of Geophysical Research*, 108(C3), doi: 10.1029/2002JC001496.
 72. Caballeria, M., Coco, G., Falqués, A., and Huntley, D.A., 2002, Self-organization mechanisms for the formation of nearshore crescentic sand bars, *Journal of Fluid Mechanics*, 465: 379-410.
 73. Coco, G., Huntley, D.A., and O'Hare, T.J., 2001, Regularity and randomness in the formation of beach cusps, *Marine Geology*, 178, 1-9.
 74. Falqués, A., Coco, G., and Huntley, D.A., 2000, A mechanism for the generation of wave driven rhythmic patterns in the surf zone, *Journal of Geophysical Research*, 105(C10), 24071-24087.
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- Edited Proceedings/Special Issues
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 2. Coco, G., and Metivier, F. (Editors), 2015, *Proceedings of the 8th Symposium on River, Coastal and Estuarine Morphodynamics*. Advances in Geosciences, EGU.
 3. Coco, G., and Metivier, F. (Editors), 2015, *Frontiers in Morphodynamics*. ESurf, EGU.
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 2. Senèchal, N., Coco, G., Bryan, K.R., MacMahan, J.H., Brown, J., and Holman, R., 2013, Tidal effects on runup in the presence of complex 3d morphologies and dissipative surfzone conditions, *Coastal Dynamics 2013*, France, 10pp.
 3. Castelle, B., and Coco, G., 2012, Morphodynamique des barres sableuses de déferlement le long des plages en baie, *XII Journées Nationales Génie Côtier - Génie Civil*, Cherbourg 12-14 June, pp. 8.
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 11. Tinoco, R.O., Cowen, E.A., and Coco, G. 2013. Flow and drag on submerged obstructions: from flow through aquatic vegetation to sediment transport in communities of benthic organisms, presented at the River, Coastal and Estuarine Morphodynamics 2013, Santander, Spain.
 12. Kakeh, N., and Coco, G. 2013. A joint evolution model of biofilm, Spartina and tidal landforms, presented at the River, Coastal and Estuarine Morphodynamics 2013, Santander, Spain.
 13. Olabarrieta, M., Coco, G., Zhou, Z. and Castanedo, S. 2013. Effect of externally and internally generated overtides on tidal basin hydro-morphodynamic feedbacks, presented at the River, Coastal and Estuarine Morphodynamics 2013, Santander, Spain.

14. Zhou, Z. Olabarrieta, M. Stefanon, L. Carniello, L. D'Alpaos, A., and Coco, G. 2013. Morphodynamic modelling of tidal networks and comparison with laboratory experiments, presented at the River, Coastal and Estuarine Morphodynamics 2013, Santander, Spain.
15. Jiménez, M., Zhou, Z., Castanedo, S., Coco, G., Medina, R., Rodriguez- Iturbe, I. 2013. Tidal channel networks: hydrodynamic controls of their topological structure, presented at the River, Coastal and Estuarine Morphodynamics 2013, Santander, Spain.
16. Calvete, D. Coco, G., Ribas Prats, F., and de Swart, H.E. 2013. Characterization of crescentic patterns in double bar systems, presented at the River, Coastal and Estuarine Morphodynamics 2013, Santander, Spain.
17. Goldstein, E.B., Coco, G., and Murray, A.B. 2013. Machine Learning Components in a Model of Inner Shelf Sorted Bedforms, presented at the River, Coastal and Estuarine Morphodynamics 2013, Santander, Spain.
18. Coco, G. Zhou, Z., van Maanen, B., Olabarrieta, M., and Tinoco, R. Morphodynamics of tidal networks: advances and challenges, AGU, San Francisco, USA.
19. Olabarrieta, M., Coco, G., Zhou, Z., 2013, The effect of morphology, tides and wind waves on the hydrodynamics of idealized river-mouth systems, AGU, San Francisco, USA.
20. van Maanen, B., Coco, G., Bryan, K.R., and Sottolichio, A., 2012. The effects of fetch-limited wind-waves and sea level rise on the evolution of tidal embayments, presented at the PECS Conference.
21. Castelle, B., and Coco, G., 2012, On the dynamics of surfzone rip channels along embayed beaches, presented at the International Conference on Coastal Engineering, Santander, Spain.
22. Bryan, K.R., Winter, C., and Coco, G., 2012, Modelling combined bar and shoreline change using a simple shape function, presented at the International Conference on Coastal Engineering, Santander, Spain.
23. Tomas, A., Menendez, M., Mendez, F.J., Coco, G., and Losada, I.J., 2012, Forecasting freak waves using data-driven models, presented at the International Conference on Coastal Engineering, Santander, Spain.
24. Ruju, A., Higuera, P., Lara, J.L., Losada, I.J., and Coco, G., 2012, Rip currents on a barred beach, presented at the International Conference on Coastal Engineering, Santander, Spain.
25. Senèchal, N., Coco, G., Bryan, K.R., Brown, J., and MacMahan, J.H., 2012, The role of large-scale swash morphology on wave runup, presented at the International Conference on Coastal Engineering, Santander, Spain.
26. Murray, A.B., and Coco, G., 2012, Cause and effect in geomorphic systems: Complex-systems perspectives. Presented at the European Geophysical Meeting (EGU), Wien (Austria).
27. Tomas, A., Menendez, M., Mendez, F.J., Coco, G., and Losada, I.J., 2012, Predicting the occurrence probability of freak waves based on buoy data and non-stationary extreme value models. Presented at the European Geophysical Meeting (EGU), Wien (Austria).
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29. van Maanen, B., Coco, G., Bryan, K.R., 2010, The role of sea-level rise on the evolution of tidal networks. Presented at the European Geophysical Meeting (EGU), Wien (Austria).

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32. Coco, G., and Calvete, D., 2009, Characterizing the variability of multiple sandbar systems with linear stability analysis, Geophysical research Abstracts, vol. 11, EGU2009-0.
33. Coco, G., Ramsay, D., Bell, R., Gillibrand, P., Goff, J., Gorman, R., Green, M., Hicks, M., Hume, T., 2008, invited talk on “Coastal hazards in New Zealand”. Presented at the Coastal Cities Summit, St. Petersburg, Florida, USA.
34. van Maanen, B., de Ruiter, P.J., Coco, G., Bryan, K.R., and Ruessink, B.G., 2008. Onshore sandbar migration at Tairua Beach (New Zealand): Numerical simulations and field measurements. Poster presented at the 31st International Conference on Coastal Engineering, Hamburg, Germany.
35. Coco, A., C.; Bryan, K.; Calvete, D.; Hume, T.; Stephens, S., 2008, "Predicting rip current behaviour: process-based and data-driven modelling." Presented at the New Zealand Coastal Society Conference: Coastal Co-existence: Industry, Culture and Environment, New Plymouth, November 2008.
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38. Gallop, S.L., Bryan, K.R., Coco, G. (2008). "Rip current dynamics during storms." Presented at the New Zealand Coastal Society Conference: Coastal Co-existence: Industry, Culture and Environment, New Plymouth, November 2008.
39. Coco, G., Bryan, K.R., and Payne, G., 2008, Video monitoring of coastal hazards, 2nd Australasian Hazards Management Conference, Wellington, New Zealand.
40. Stephens, S., and Coco, G., (2007), Modelling long-term coastal evolution, The New Zealand Marine Society Conference 2007, Hamilton, New Zealand.
41. Coco, G., Calvete, D., Falqués, A., and Dodd, N., (2007), The effect of antecedent conditions on rip channel development, The New Zealand Marine Society Conference 2007, Hamilton, New Zealand.
42. Dickson, M., Hicks, M., and Coco, G., (2007), Long-term modelling of profile evolution on eroding alluvial fan coasts, The New Zealand Marine Society Conference 2007, Hamilton, New Zealand.
43. Murray, A.B., Coco, G., and Green, M.O., (2007), Different approaches to modelling inner-shelf ‘sorted bedforms’, and their responses to complex forcing scenarios. Ocean Sciences 2008, Orlando, Florida, USA.
44. Hicks, M., Dickson, M., and Coco, G., (2006), A numerical model of retreating alluvial fan coasts, *American Geophysical Union 2006*.
45. Bryan, K.R., and Coco, G., (2006), Run-up predictability using nonlinear forecasting analysis, *American Geophysical Union 2006*.

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47. Murray, A.B., Coco, G., Green, M.O., Hume, T.M., and Thielert, E.R., (2005), A refined numerical model for sorted bedform formation and evolution, *American Geophysical Union 2005*.
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51. Falqués, A., Caballeria, M., Coco, G., and Huntley, D.A. (2001) Nonlinear dynamics of nearshore crescentic and transverse sand bars, *European Geophysical Society 2001*.
52. Coco, G., Werner, B.T., Falqués, A., and Caballeria, M. (2000) Comparison of two models for crescentic bars, *American Geophysical Union 2000*.

6. Teaching Experience

Undergraduate

- Environmental Modelling, taught in 2014-2015, 2015-2016
- Estuarine Morphodynamics, taught in 2012-2013, 2013-2014.
- Coastal Engineering, taught in 2011-2012 and 2012-2013
- Laboratory demonstrations of nearshore dynamics for third-year students (modules: Waves and Beaches, Marine Sediment Dynamics, Core Skills for Marine Studies), University of Plymouth, 1998-1999.

Graduate/postgraduate

- Modelling of Environmental and Social Systems, taught in 2014-2015, 2015-2016
- Introduction to Environmental Science, taught in 2014-2015, 2015-2016
- Attended the “Graduate Teaching Assistant Course” (Plymouth, 1999)
- Lecturer on Nearshore Morphodynamics as part of the Master degree in “Computational and Applied Physics”. This was a joint appointment at the Professor level from University of Barcelona and Technical University of Catalunya (Spain)
- Lecturer on Short Course on Coastal Engineering, Aucland 2015.
- Lecturer in Geomorphology at Scripps Institution of Oceanography – University of California San Diego
- Lecturer on Nearshore Morphodynamics at the European Summer School on “Environmental Fluid Dynamics”, Vilanova (Spain)
- Lecturer at biannual national courses on “Managing coastal hazards in New Zealand”
- Lecturer at short course “Self-organized morphodynamic patterns in the nearshore”, Coastal Dynamics 2013, Arcachon, France.
- I can contribute to papers in a range of subjects: Nearshore and Estuarine Processes, Geomorphology, Oceanography, Complex Systems and Nonlinear Processes, Data Analysis, Coastal Hazards and Management.

- External examiner of PhD thesis:
 - Y. Ciriano: Edge waves over complex geometries, Univeristat Politecnica de Catalunya (Spain), 2004
 - R. Garnier: Nonlinear modelling of surf zone morphodynamical instabilities, University of Bordeaux (France), 2006
 - D.R. Strauss: Morphological modeling of intermediate beach state transitions, Griffith University (Australia), 2008
 - B.D. Morris: Infilling and sedimentation mechanisms at intermittently open-closed lagoons, University of New South Wales (Australia), 2009
 - A. Espejo: Temporal and spatial variability in surfing resources, University of Cantabria (Spain), 2011
 - C. Berni: Sediment transport in the shoaling region, University of Grenoble (France), 2011
 - O.Q.G. Gutierrez: development of a methodology for the study of beach morphodynamics using self-organizing maps of video images, University of Cantabria (Spain), 2012
 - N. van der Berg, Modelling the dynamics of large scale shoreline sand waves, Universitat Politecnica de Catalunya, Spain, 2012
 - G. Daudet: Morphodynamic modeling of a wave-dominated inlet: Albufera lagoon, University of La Rochelle (France), 2014
 - A. Mazieres : Evolution morphologique et processus sedimentaires actuels du plateau continental interne sud-aquitain, University of Bordeaux (France), 2015
 - T. Moura : Infragravity wave forcing in the surf and swash zone, University of Queensland (Australia), 2016

- Supervision of Post-Doctoral Fellows
 - Dr. Mark Dickson: 3 years post-doc (2003-2006) funded by FRST (NZ). Topic: cliff erosion. Present position: Associate Professor at Auckland University (NZ).
 - Dr. Maitane Olabarrieta: 2 years post-doc (2012-2013) funded by the AGL Fellowship. Topic: river-mouth morphodynamics. Present position: Associate Professor at University of Florida (USA).
 - Dr. Rafael Tinoco: 2 years post-doc (2012-2014) funded by the AGL Fellowship. Topic: river-mouth morphodynamics. Present position: Assistant Professor at University of Illinois (USA).

- Supervision of PhD students:
 - Z. Zhou: Morphodynamics of tidal channels (completed in 2015, primary supervisor). University of Cantabria, Spain.
 - M. Jimenez, Statistical characterization of tidal networks (completed in 2014, co-supervisor), University of Cantabria, Spain.
 - E. Goldstein, Machine learning and nearshore bedforms (completed in 2014, co-supervisor), Duke University.
 - R. Guedes: Analysis of runup dynamics using video imagery (completed in 2012, co-supervisor). University of Waikato, New Zealand.
 - J. Vangaalen: Alternative Statistical Methods for Analyzing Geological Phenomena: Bridging the Gap Between Scientific Disciplines (completed in 2012, co-supervisor). University of South Florida, USA.
 - B. van Maanen: The effect of biomorphodynamic interactions on estuarine evolution (completed in 2011, primary supervisor). NIWA, New Zealand.

- Supervision of MSc students:
 - I. Jalón Rojas: The effect of cross-shore beach profile on runup elevation (2013)

- N. Kakeh: A biomorphodynamic model on tidal landforms (2013)
- A. Wood: Long term beach profile variations in the Waikato Region (2010)
- S. Gallop: Observations of rip currents on an embayed beach (2009)
- C. Huisman: Groundwater dynamics at Raglan beach, New Zealand (2009)
- W. van de Lageweg: On the coupling between sandbar and shoreline position, (2008)
- M.T. Abogado Rios: The role of grain size composition on sorted bedform development (2009)
- S. Salmon: A New Technique for Measuring Run-up Using Video Imagery (2007)
- P. de Ruiter: On the long-term variability of sandbar position (2007)
- B. van Maanen: Onshore sandbar migration at Tairua beach, New Zealand (2007)