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Age: 39
Nationality: French
Date of Birth: 12/11/1978
Place of Birth: La Rochelle
Civil state: married, 2 childrens

Researcher in coastal oceanography and sediment dynamics

Appointments

- 2017- CNRS senior researcher (*Directeur de Recherche au CNRS*, equivalent to full professor).
2013- Head of the team “Physical Dynamics of Coastal zones”, 1st class CNRS research Officer since November 2014.
2010-2014 CNRS Research Officer at the Joint Research Unit LIENSS, CNRS-Université de La Rochelle.
2008-2010 Research Officer at the Portuguese National Civil Engineering Lab (LNEC).
2006-2008 Marie Curie Post-doctoral fellow at the Portuguese National Civil Engineering Lab (LNEC). Project: improving a morphodynamic modelling system.
2005-2006 Assistant professor (ATER) at the University of La Rochelle. Research project: improving fluorescent tracer techniques to measure sediment transport.
2002-2005 PhD student and assistant professor at the University of La Rochelle.

Academic formation

- 2015 **Habilitation to coordinate research activities.** Defended on the 15/06/2015 at the University of La Rochelle under the theme: « Hydro-sedimentary dynamics of mixed-energy coastal zones».
2002-2005 **PhD Thesis**, specialty: marine geology and physical oceanography, University of La Rochelle. Defended on the 21/09/2005 with honours.
2001-2002 **Master of Science (*Diplôme d'Etudes Approfondies*) GETI, 2nd year**, Universities of La Rochelle and Poitiers, France. With honours, top of one year.
2000-2001 **Master of Earth Science, 1st year**. University of La Rochelle, obtained with honors.
1997-2000 **Bachelor of Physics (*Licence de sciences physiques*)**. University of La Rochelle.

Research interests

Physical processes controlling the dynamics of coastal zones: wave-current interactions, wave setup, infragravity waves, morphodynamics of tidal inlets (migration, closure, seasonal cycle) sandspits and sandbanks, interactions between hydrodynamics and vegetation.

Hydrodynamics under extreme events: wave-current-atmosphere interactions, storm surges, coastal flooding, coastal defense strategies.

Wave climates: long term trends, extreme values and inter-annual variability in relation with large-scale atmospheric patterns (NAO, EA-WR, etc).

Technical skills

Development and application of numerical models: tides, waves, coastal circulation, storm surges and flooding, infra-gravity waves, sediment transport and morphodynamics. Coupling between waves and currents in 2DH and 3D, using radiation stress and vortex force formalisms.

Field measurements: Acquisition and processing (temporal, spectral) of field observation of water levels, waves, sediment transport (including fluorescent tracers), bathymetry and topography.

Research projects

As coordinator:

MyInlet (submitted). Morphodynamics of tidal Inlets under storm waves. Project submitted to ERC, category “Consolidator”. Requested funding : 1980000 €

DURALIT (2017-2019). Hydro-sedimentary dynamics of pre-littoral zones for their sustainable exploitation. Project funded by FEDER, budget: 319000 €.

EVEX (2015-2018). Extreme events and erosion of the shoreline : field measurements, numerical modelling and societal impacts. Regional Chaire program funded by Region Poitou-Charentes. Budget: 300000 €.

DYNAMO (2013-2015). MorphoDYNAmics of Tidal Inlets : 3D numerical modelling and impacts on pollutant circulation. Project funded by the French ANR, budget: 174992 €.

MOWADI (2010-2012). 3D morphodynamic modelling of wave-dominated inlets. Project funded by the Portuguese research and technology agency (FCT). Budget: 167500 €.

As participant:

SANDEX (2007-2010). Sand extraction in the Portuguese continental shelf: impacts and morphodynamic evolution. Project funded by the Portuguese research and technology agency (FCT).

MADYCOS (2008-2010). Multidisciplinary Integrated Analysis of the Sediment Dynamics and Fecal Contamination in Intermittent Coastal Systems. Project funded by the Portuguese research and technology agency (FCT).

G-CAST (2007-2010). Application of GRID-computing in a coastal morphodynamics nowcast-forecast system. Project funded by the Portuguese research and technology agency (FCT).

IMMATIE (2006-2008). Improvement of a Morphodynamic Modelling system applied to Tidal Inlet Environments. Marie Curie EIF Hosted at LNEC of Lisbon.

SATURN (2005-2007). Sand Transport in surface waters: an uncertainty analysis. Project funded by the Portuguese research and technology agency (FCT).

EMERA (2005-2008). Morphodynamic of the Aveiro Inlet (Portugal). Project funded by the Portuguese research and technology agency (FCT)

Scientific publications

Book chapters

- [B. 3] **Bertin, X.**, Olabarrieta, M. et McCall R., 2017. Hydrodynamics under storm conditions. In: Coastal Storms: from forecasting to predictions, Wiley ed.
- [B. 2] Waeles, B., **Bertin, X.**, Chevaillier, D., Breilh, J.F., Li K. and Le Mauf, B., 2016. Limitation of High Water Levels in Bays and Estuaries During Storm Flood Events. Advances in Hydroinformatics: SIMHYDRO 2014, Springer Singapore (ed.), 439-449.
- [B. 1] **Bertin, X.**, Fortunato, A.B., Roelvink, D, 2011. Morphodynamic modeling of tidal inlets and embayments. Geomatic Solutions for Coastal Environments, Nova Science Publisher (ed.) pp. 197-214.

Peer-reviewed papers in international journals

- [A.R. 58] Huguet, J.-R., **Bertin, X.** and Arnaud, G., 2018. Managed realignment strategies to mitigate storm-induced flooding: a case study in La Faute-sur-mer, France. Coastal Engineering 134, 168-176..
- [A.R. 57] Guérin, T., **Bertin, X.**, Coulombier, T. and de Bakker, A., 2018. Impacts of wave-induced circulation in the surf zone on wave setup. Ocean Modelling 123, 86-97.
- [A.R. 56] **Bertin, X.**, de Bakker, A., van Dongeren, A., Coco, G., André, G., Ardhuin, F., Bonneton, P., Bouchette, F., Castelle, B., Crawford, W.C., Davidson, M., Deen, M., Dodet, G., Guérin, T., Inch, K., Leckler, F., McCall, R., Muller, H., Olabarrieta, M., Roelvink, D., Ruessink, G., Sous, D., Stutzmann, E. and Tissier, M., 2018. Infragravity waves: From driving mechanisms to impacts. Earth-Science Reviews 177, 774-799.
- [A.R. 55] Becu, N., Amalric, M., Anselme, B., Beck, E., Bertin, X., Delay, E., Long, N., Marilleau, N., Pignon-Mussaud, C., Rousseaux, F., 2017. Participatory simulation to foster social learning on coastal flooding prevention. Environmental Modelling and Software 98, 1-11.
- [A.R. 54] Baumann, J., Chaumillon, E., **Bertin, X.**, Schneider, J.-L., Guillot, B., Schmutz, M., 2017. Importance of infragravity waves for the generation of washover deposits. Marine Geology 391, 20-35.
- [A.R. 53] Fortunato, A.B., Freire, P., **Bertin, X.**, Rodrigues, M., Liberato, M.L.R. and Ferreira, J., en révisions. A numerical study of the February 15, 1941 storm in the Tagus estuary. En révision à Continental Shelf Research 144, 50-64.
- [A.R. 52] Krien, Y., Testut, L., Islam, A.K.M.S., **Bertin, X.**, Durand, F., Mayet, C., Tazkia, A.R., Becker, M., Calmant, S., Papa, F., Ballu, V., Shum, C.K., Khan, Z.H., 2017. Towards improved storm surge models in the northern head Bay of Bengal. Continental Shelf Research 137, 154-162.
- [A.R. 51] Poirier, C., Tessiera, B., Chaumillon, E., **Bertin, X.**, Fruergaard, M., Mouaze, D., Noël, S., Weill, P., Wöppelmann, G., 2017. Decadal changes in North Atlantic atmospheric circulation patterns recorded by sand spits since 1800 AD. Geomorphology 281, 1-12.
- [A.R. 50] Tazkia, A.R., Krien, Y., Durand, F., Testut, L., Islam, A.K.M.S., Papa, F. and **Bertin, X.**, 2017. Seasonal modulation of M2 tide in the northern Bay of Bengal. Continental Shelf Research 137, 154-162.

- [A.R. 49] Chaumillon, E., **Bertin, X.**, Fortunato, A., Bajo, M., Schneider, J.-L., Dezileau, L., Walsh, J.P., Michelot, A., Chauveau, E., Créach, A., Hénaff, A., Sauzeau, T., Waeles, B., Gervais, B., Jan, G., Baumann, J., Breilh, J.-F., Pedreros, R., 2017. Storm-induced marine flooding: lessons from a multidisciplinary approach. *Earth-Science Reviews* 165, 151-184.
- [A.R. 48] Guérin, T., **Bertin, X.**, and Chaumillon, E., 2016. Wave control on the rhythmic development of a wide estuary mouth sandbank. *Marine Geology* 380, 79-89.
- [A.R. 47] **Bertin, X.**, 2016. Storm surges and coastal flooding: Status and challenges. *La Houille Blanche*, 2016-January (2), 64-70.
- [A.R. 46] **Bertin, X.** and Olabarrieta, M., 2016. Relevance of infragravity waves in a wave-dominated inlet. *Journal of Geophysical Research: Oceans* 121, doi:10.1002/2015JC011444.
- [A.R. 45] Long, N., Millescamps, B., Guillot, B., Pouget, F., **Bertin, X.**, 2016. Monitoring the topography of a dynamic tidal inlet using UAV imagery. *Remote Sensing* 8 (5), art. no. 387.
- [A.R. 44] Fortunato, A.B., Li, K., **Bertin, X.**, Rodrigues, M. and Martin-Miguez, B., 2016. Determining extreme sea levels along the Iberian Atlantic coast. *Ocean Engineering* 111, 471-482.
- [A.R. 43] Guérin, T., **Bertin, X.**, and Dodet, G., 2016. A numerical scheme to simulate coastal morphodynamics on unstructured grids. *Ocean Modelling* 104, 45-53.
- [A.R. 42] Roussel, N., Ramillien, G., Frappart, F., Darrozes, J., Gay, A., Biancale, R., Striebig, N., Hanquiez, V., **Bertin, X.**, Allain, D., 2015. Sea level monitoring and sea state estimate using a single geodetic receiver. *Remote Sensing of Environment* 171, 261-277.
- [A.R. 41] **Bertin, X.** Fortunato, A.B. and Dodet, G., 2015. Processes controlling the seasonal cycle of wave-dominated inlets. *Journal of Integrated Coastal Zone Management* 15(1): 9-19.
- [A.R. 40] Guerreiro, M., Fortunato, A.B., Freire, P., Rilo, A., Taborda, R., Freitas, M.C., Andrade, C., Silva, T., Rodrigues, M., **Bertin, X.** and Azevedo, A., 2015. Evolution of the hydrodynamics of the Tagus estuary (Portugal) in the 21st century. *Journal of Integrated Coastal Zone Management* 15(1): 65-80.
- [A.R. 39] Crawford, W., Ballu, V., **Bertin, X.** and Karpytchev, M., 2015. The sources of deep ocean infragravity waves in the North Atlantic Ocean. *Journal of Geophysical Research-Ocean* 120, 5120-5133 .
- [A.R. 38] **Bertin, X.**, Li, K. and Roland and Bidlot, J.R., 2015. The contribution of short waves in storm surges: two recent examples in the central part of the bay of Biscay. *Continental Shelf Research* 96, 1-15.
- [A.R. 37] **Bertin, X.**, Li, K., Roland, A., Breilh, J.F., Zhang, Y.L. and Chaumillon, E., 2014. A modeling-based analysis of the flooding associated with Xynthia, central Bay of Biscay. *Coastal Engineering* 94, 80-89 .
- [A.R. 36] Breilh, J.F., **Bertin, X.**, Chaumillon, E., Giloy, N. and Sauzeau, T, 2014. How frequent is storm-induced flooding in the central part of the Bay of Biscay ? *Global and Planetary Change* 122, 161-175.
- [A.R. 35] Gonçalves, D.S., Pinheiro, L.M., Silva, P.A., Rosa, J., Rebelo, L., **Bertin, X.**, Braz Teixeira, S., Esteves, R, 2014. Morphodynamic evolution of a sand extraction excavation offshore vale do lobo, algarve, Portugal. *Coastal Engineering* 88, 75-87.
- [A.R. 34] Fortunato, A.B., Nahon, A., Dodet, G., Rita Pires, A., Conceição Freitas, M., Bruneau, N., Azevedo, A., **Bertin, X.**, Benevides, P., Andrade, C. and Oliveira, A. Morphological evolution of an ephemeral tidal inlet from opening to closure: The Albufeira inlet, Portugal. *Continental Shelf Research* 73, 49-63.

- [A.R. 33] Bruneau, N., **Bertin, X.**, Castelle, B., Bonneton, P., 2014. Tide-induced flow signature in rip currents on a meso-macrotidal beach. *Ocean Modelling* 74, 53-59.
- [A.R. 32] **Bertin, X.**, Li, K., Roland, A., 2014. Analysis of the physical processes controlling the storm surge during Xynthia (February 2010). *L Houille Blanche* 1, 18-24.
- [A.R. 31] Carrasco, A.R., Ferreira, O., Matias, A., Freire, P., **Bertin, X.**, Dias, J.A., 2013. Sediment transport measurements with tracers in very low-energy beaches. *Earth Surface Processes and Landforms* 38 (6), 561-569.
- [A.R. 30] Breilh, J.F., Chaumillon, E., **Bertin, X.**, and Gravelle, M., 2013. Assessment of static flood modeling techniques: application to contrasting marshes flooded during Xynthia (Western France). *Natural Hazard and Earth System Sciences* 13, 1595-1612.
- [A.R. 29] **Bertin, X.**, Prouteau, E. and Letetrel, C., 2013. A significant increase in wave height in the North Atlantic Ocean over the 20th century. *Global and Planetary Change* 106, 77-83.
- [A.R. 28] Dodet, G., **Bertin, X.**, Bruneau, B., Fortunato, A.B., Nahon, A. and Roland, A., 2013. Wave-current interactions at a wave-dominated inlet. *Journal of Geophysical Research-C (Ocean)* 118, 1587-1605.
- [A.R. 27] Niquil, N., Chaumillon, E., Johnson, G.A., Bertin, X., Grami, B., David, V., Bacher, Cédric, Asmus, H., Baird, D., Asmus, R., 2012. The effect of physical drivers on ecosystem indices derived from ecological network analysis: comparison across estuarine ecosystems. *Estuarine, Coastal and Shelf Science* doi: 10.1016/j.ecss.2011.12.031.
- [A.R. 26] Carrasco, A.R., Ferreira, O., Matias, A., Freire, P., **Bertin, X.**, Dias, J.A., 2012. Sediment transport measurements with tracers in very low-energy beaches. I In press to *Earth Surface Processes and Landforms*.
- [A.R. 25] Silva, A.N., Taborda, R., **Bertin, X.** and Dodet, G., 2012. Seasonal to Decadal Variability of Longshore Sand Transport at the Northwest Coast of Portugal. *Journal of Waterway, Port, Coastal, and Ocean Engineering* 138(6), 464-472.
- [A.R. 24] **Bertin, X.**, Bruneau, N., Breilh, J.F., Fortunato, A.B. and Karpytchev, M., 2012. Importance of wave age and resonance in storm surges: the case Xynthia, Bay of Biscay. *Ocean Modelling* 42 (4), 16-30.
- [A.R. 23] Nahon, A., **Bertin, X.**, Fortunato, A.B. and Oliveira, A., 2012. Process-based 2DH morphodynamic modeling of tidal inlets: a comparison with empirical classifications and theories. *Marine Geology* 291–294, 1-11.
- [A.R. 22] Bruneau, N., Fortunato, A.B., Dodet, G., Freire, P., Oliveira, A. and **Bertin, X.** 2011. Future evolution of a tidal inlet due to changes in wave climate, Sea level and lagoon morphology (Óbidos lagoon, Portugal). *Continental Shelf Research* 31, 1915-1930.
- [A.R. 21] Poirier, C., Sauriau, P.G., Chaumillon, E. and **Bertin, X.**, 2010. Influence of sediment dynamics on mollusc death assemblages in a temperate tide-and-wave dominated coastal environment: implications for the fossil record. *Continental Shelf Research* 30 (17), 1876–1890.
- [A.R. 20] Allard, J., Chaumillon, E., **Bertin, X.**, Ganthy, F. and Poirier C., 2010. Secular morphological evolution and Holocene stratigraphy of a macro tidal bay: the Marennes-Oléron Bay (SW France). *Bulletin de la Société Géologique de France* 181, 151-169.
- [A.R. 19] Plecha, S., Vaz, N., **Bertin, X.**, Silva, P., Oliveira, A., Fortunato, A.B. and Dias, M.A., 2010. Sensitivity analysis of a morphodynamic modeling system applied to a coastal lagoon inlet. *Ocean Dynamics* 60, 275-284.
- [A.R. 18] Dodet, G., **Bertin, X.**, and Taborda, R., 2010. Wave climate variability in the North-East Atlantic Ocean over the last six decades. *Ocean Modelling* 31, 120-131.

- [AR.17] Castelle, B., Turner, I., **Bertin, X.** and Tomlinson, R, 2009. Beach nourishment at Coollangatta Bay (Australia) over the period 1987-2005: impacts and lessons. *Coastal Engineering* 59 (9), 940-950.
- [AR.16] Fortunato, A.B., **Bertin X.** and Oliveira A., 2009. Space and time variability of uncertainty in morphodynamic simulations. *Coastal Engineering* 56 (8), 886-894.
- [AR.15] **Bertin X.**, Fortunato, A.B. and Oliveira A., 2009. A modeling-based analysis of processes driving wave-dominated inlets. *Continental Shelf Research* 29, 819-834.
- [AR.14] **Bertin X.**, Fortunato, A.B. and Oliveira A., 2009. Simulating morphodynamics with unstructured grids: description and validation of an operational model for coastal applications. *Ocean modeling* 28, 75-873.
- [AR.13] Dias, J., Sousa, M.C., **Bertin X.**, Fortunato, A.B., and Oliveira A., 2009. Numerical modeling of the impacts of Ancão Inlet relocation (Ria Formosa, Portugal). *Environmental Modelling and Software* 24, 711-725.
- [AR.12] Allard, J., **Bertin, X.**, Chaumillon, E. and Pouget, F, 2008. Sandspit rhythmic progradation: a potential record of wave climate variation? The Arcay sandspit, western coast of France. *Marine Geology* 253, 107-131.
- [AR.11] **Bertin, X.**, Castelle, B., Chaumillon, E., Butel, R. and Quique, R, 2008. Estimation and inter-annual variability of the longshore transport at a high-energy dissipative beach: the St Trojan beach, SW Oléron Island, France. *Continental Shelf Research* 28, 1316-1332.
- [AR.10] Chaumillon, E., **Bertin , X.**, Falchetto, H., Allard, A., Weber, N., Walker, P., Povreau, N., and Wöppelmann, G., 2008. Multi-scale evolution of a wide estuary linear sandbank, The longe de Boyard, Atlantic coast of France. *Marine Geology* 251, 209-223.
- [AR.9] **Bertin, X.**, Castelle, B., Anfuso, G. and Ferreira, O., 2008. Improvement of the mixing depth prediction under conditions of oblique wave breaking. *Geo-Marine Letters* 28, 65-75.
- [AR.8] **Bertin, X.**, Deshoulieres, A., Allard, J. and Chaumillon, E., 2007. A new fluorescent tracer experiment improves understanding sediment dynamics of the Arcay sandspit (France). *Geo-Marine Letters* 27 (1), 63-69.
- [AR.7] Idier, D., Pedreros, R., Oliveros, C., Sottolichio, A., Choppin L., and **Bertin, X.**, 2006. Importance de la houle dans la dynamique hydro-sédimentaire des Pertuis Charentais, *C.R. Géosciences* 338 (10), 718-726.
- [AR.6] **Bertin X.** and Chaumillon, E., 2006. Evidences for oyster farming implications in increasing sedimentation rates in a macrotidal bay: the Marennes-Oléron Bay, France. *Cahiers de Biologie Marine* 47 (1), 19-22.
- [AR.5] **Bertin X.** and Chaumillon E., 2005. New insights in shallow gas generation from VHR seismic and bathymetric data in the Marennes-Oléron bay, France. *Marine Geophysical Research* 26, 225-233.
- [AR.4] **Bertin X.** and Chaumillon E., 2005. Apports de la modélisation sur bathymétries anciennes dans la compréhension des bancs de sable estuariens. *C.R. Geosciences* 337, 1375-1383.
- [AR.3] **Bertin X.**, Chaumillon E., Sottolichio, A. and Pedreros, R., 2005. Tidal inlet response to sediment infilling of the associated bay and possible implications of human activities: The Marennes-Oléron Bay and Maumusson Inlet, France. *Continental Shelf Research* 25, 115-1131.
- [AR.2] Chaumillon, E., Tessier, B., Weber, N., Tesson, M. and **Bertin, X.**, 2004. Buried Sandbodies within Present-Day Estuaries (Atlantic Coast of France) Revealed by Very High Resolution Seismic Surveys. *Marine Geology* 211, 189-214.

[AR.1] **Bertin, X.**, Chaumillon E, Weber N and Tesson M, 2004. Morphological evolution and coupling with bedrock substratum at a mixed energy tidal inlet: the Maumusson inlet, France. *Marine Geology*, 204, 187-202.

Extended conference papers

- [AC.47] Guérin, T. and Bertin, X. 2017. 3d phase-averaged modelling of the hydrodynamics of a dissipative beach under energetic conditions. Proceedings of Coastal Dynamics 2017 Conference, Helsingør, Denmark, 1680-1689.
- [AC.46] **Bertin, X.**, and Arnaud, G., 2015. Coastal flooding and dune breaching in the central part of the bay of biscay .Proceedings of the 36th IAHR World Congress 28 June – 3 July, 2015, The Hague, the Netherlands.
- [AC.45] Guérin, T., **Bertin X.** and Chaumillon, E., 2015. Pluri-decadal morphodynamic and stratigraphic modelling of an estuary sandbank. Proceedings of the Coastal Sediments conference, 11-15th May 2015, San Diego, USA.
- [AC.44] **Bertin X.** and Obabarrieta, M., 2015. An infragravity wave-dominated inlet? Proceedings of the Coastal Sediments conference, 11-15th May 2015, San Diego, USA.
- [AC.43] Chaumillon E., Ozenne F., **Bertin X.**, Long N., Ganthy F., 2014. Wave climate and inlet channel meander bend control spit breaching and migration of a new inlet: La Coubre Sandspit, France. *Journal of Coastal Research*, SI 66, ISSN 0749-0208.
- [AC.42] Arnaud, G. and **Bertin, X.**, 2014. Contribution du setup induit par les vagues dans la surcote associée à la tempête Klaus. Proceedings of the XIIIth Journées Nationales Génie Côtier – Génie Civil, Dunkerque, 859-868.
- [AC.41] Guerin, T., **Bertin, X.**, Chaumillon, E. and Dodet, G., 2014. Prise en compte de l'hétérogénéité granulométrique du sédiment en morphodynamique côtière. Proceedings of the XIIIth Journées Nationales Génie Côtier – Génie Civil, Dunkerque, 363-372.
- [AC.40] **Bertin, X.**, 2014. Contribution du setup induit par les vagues dans la surcote associée à la tempête Klaus. Proceedings of the XIIIth Journées Nationales Génie Côtier – Génie Civil, Dunkerque, 859-868.
- [AC.39] **Bertin, X.**, Li, K., Roland, A., Breilh, J.F., Zhang, Y.L and Chaumillon, E., E., 2014. Simulation numérique de la submersion marine associée à la tempête Xynthia (février 2010). Proceedings of the XIIth Journées Nationales Génie-Côtier-Génie Civil, 12-14th june 2012, Cherbourg (France), 879-888.
- [AC.38] Li, K., **Bertin, X.**, Roland, A., Zhang, Y.J. and Breilh, J.-F., 2013. A high-resolution hindcast of the flooding during Xynthia Storm, central Bay of Biscay. Proceedings of the 7th international conference on Coastal Dynamics, Arcachon, 24-28 June 2013, 1083 – 1094.
- [AC.37] **Bertin, X.**, Dodet, G., Fortunato, A.B. and Bruneau, N., 2013. A review of the processes leading wave-dominated inlets to close. Proceedings of the 7th international conference on Coastal Dynamics, Arcachon, 24-28 June 2013, 173 – 182.
- [AC.36] Nahon, A., Freire, P., Pires, A.R., Dodet, G., **Bertin, X.**, Freitas, M.C., Fortunato, A.B. et Andrade, C., 2012. Morphodynamique d'une embouchure tidale artificielle éphémère : la lagune d'Albufeira, Portugal. Proceedings of the XIIth Journées Nationales Génie-Côtier-Génie Civil, 12-14th june 2012, Cherbourg (France), 355-362.

- [AC.35] Dodet, G., **Bertin, X.**, Bruneau, N., Fortunato, A., Nahon, A. et Taborda, R., 2012. Interactions vagues-courants dans une embouchure tidale dominée par la houle. Proceedings of the XIIth Journées Nationales Génie-Côtier-Génie Civil, 12-14th june 2012, Cherbourg (France), 41-50.
- [AC.34] **Bertin, X.**, Li, K., Roland, A., Breilh, J.F. et Chaumillon, E., 2012. Contributions des vagues dans la surcote associée à la tempête Xynthia, février 2010. Proceedings of the XIIth Journées Nationales Génie-Côtier-Génie Civil, 12-14th june 2012, Cherbourg (France).
- [AC.33] **Bertin X.**, Bruneau, N. and Breilh, J.F, 2012. Importance de l'age des vagues et de la resonnance sur le plateau continental : le cas de la tempête Xynthia, février 2010. Centenaire de la société Hydrotechnique de France, Evénements extrêmes fluviaux et maritimes, 34èmes journées de l'Hydraulique, Paris, 1 et 2 février 2012.
- [AC.32] Chaumillon E., Wöppelmann G., Karpytchev M., **Bertin X.**, 2011. Mesures et modélisations des évolutions du niveau marin, des vagues, des tempêtes et des évolutions des littoraux pour une gestion durable des littoraux. Vertigo, Hors-Série 9 (Juillet 2011).
- [AC.31] Bruneau N., Dodet G., **Bertin X.** and Fortunato A.B., 2011. Development of a three-dimensional coupled wave-current model for coastal environments. Journal of Coastal Research, SI 64 986-990, 986 – 990, ISSN 0749-0208.
- [AC.30] Rosa, J., Silva P.A., **Bertin, X.**, Fortunato A.B., 2011. Waves, wind and tidal forcing on a sandpit morphodynamics. Journal of Coastal Research, SI 64, 1170 – 1174, ISSN 0749-0208.
- [AC.29] Freire, P., Taborda, R., **Bertin, X.**, Guerreiro, M., Fortunato, A. B., Silva, A. M., Andrade, C., Oliveira, A., Antunes, C., Freitas, M. C., Nahon, A., Rodrigues, M. and Bruneau, N., 2011. Medium-term morphodynamic evolution of a small coastal inlet. Journal of Coastal Research, SI 64 (Proceedings of the 11th International Coastal Symposium), 666-670, ISSN 0749-0208.
- [AC.28] Proença, B., Oliveira, F.S.B.F, Sancho, F. and **Bertin X.**, 2010. Impact of marine sand extraction in the southern Portuguese coastline. International Conference on Coastal Conservation and management, Estoril, 11-14 Avril 2010.
- [AC.27] Barbosa, S., Dodet, G., **Bertin, X.**, 2010. Comparison of wave heights in the North-East Atlantic from radar altimetry and a regional numerical model, Proceedings of 38th Committee on Space Reasearch Scientific Assembly, 18-25 July 2010, Bremen.
- [AC.26] **Bertin, X.**, Dodet, G., 2010. Variabilité du climat de houle dans le Golfe de Gascogne au cours des six dernières décennies. Proceedings of XIIème Journées Nationales Génie Côtiers - Génie Civile, 22-24 June 2010, Les Sables d'Olonne, France.
- [AC.25] Bruneau, N., Oliveira, A., **Bertin, X.**, Fortunato, A.B., Costa, M., Dodet, G., 2010. Towards long-term simulations of lagoon inlets: Performance analysis and application of a partially parallelized morphodynamic modeling system. Proceedings of XVIII International Conference on Computational Methods in Water Resources, 21-24 June 2010, Barcelona.
- [AC.24] Lopes, V, Silva, P.A., **Bertin, X.**, Fortunato, A.B. and Oliveira, A., 2009. Impact of a Dredged Sandpit on Tidal and Wave Hydrodynamics. Journal of Coastal Research SI 56, 529-533.
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 - [AC.3] **Bertin X.**, Chaumillon E., Weber N. and Tesson M., 2003, Morphological evolution and coupling with bedrock substratum at a mixed energy tidal inlet: The Maumusson inlet, France. In: Sanchez-Arcilla A and Bateman A (Ed), *Proceedings of the 3rd IAHRD symposium on river, coastal and estuarine morphodynamics (RCEM 2003)*, IAHRD publication, Madrid, Spain: 494-503.
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- [RC 26] **Bertin, X.**, Fortunato, A.B., Dodet, G., Bruneau, N. and Nahon, A., 2013. Dinâmica das embocaduras dominadas pelas ondas: síntese dos processos físicos dominantes. 2a Conferência sobre a Morphodinâmica Estuarine e Costeira, Aveiro, 9-10 May 2013.
- [RC 25] Ganthy, F., Fortunato, A.B. and **Bertin, X.**, 2013. Generation of initial bed composition for morphodynamic models: method description and validation. 2a Conferência sobre a Morphodinâmica Estuarine e Costeira, Aveiro, 9-10 May 2013.
- [RC 24] Fortunato, A.B. and **Bertin, X.**, 2013. Evolution séculaire des niveaux maritimes extrêmes au niveau des côtes Charentaises. Journées Refmar, 17-21 juin 2013, St Mandé.
- [RC 23] **Bertin, X.**, Payo-Payo, M. and Fortunato, A.B., 2013. Le cycle saisonnier du niveau de la mer dans l'Atlantique NE : origine et conséquences. Journées Refmar, 17-21 juin 2013, St Mandé.
- [RC.22] Dodet, G. **Bertin, X.**, Fortunato, A.B., Dodet, G. and Roland, A., 2013. Impact of wave-current interactions on the morphodynamics of a wave-dominated tidal inlet. Abstract of the 8th Symposium on River, Coastal and Estuarine Morphodynamics, Santander, 9-13 June 2013.
- [RC.21] **Bertin, X.**, Fortunato, A.B., Dodet, G. and Oliveira, A., 2013. Morphodynamic modeling of tidal inlets downdrift migration. Abstract of the 8th Symposium on River, Coastal and Estuarine Morphodynamics, Santander, 9-13 June 2013.
- [RC.20] **Bertin, X.**, Li, K., Roland, A., Breilh, J.F. et Chaumillon, E., 2012a. Short-wave contributions in the storm surge associated with Xynthia, February 2010, western France. *Geophysical Research Abstracts*, Vol. 14, EGU2012-13045.

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- [RC.18] **Bertin X.**, Bruneau, N., Breilh, J.F. and Karpytchev, M., 2011. On the importance of wave age and resonance in storm surges:the case Xynthia, Bay of Biscay. IMUM 2011, AWI Bremerhaven, August 22-25, 2011.
- [RC.17] Vaz, N., Plecha, S., **Bertin, X.**, Silva, P., Oliveira, A., Fortunato, A.B. and Dias, J.M., 2008. Sensitivity analysis of a morphodynamic modelling system applied to a coastal lagoon inlet. 6^a Assembleia Luso Espanhola de Geodesia e Geofísica, Tomar, Portugal, 11-14 février 2008.
- [RC.16] Sousa, M.C., **Bertin, X.**, Fortunato, Oliveira, A. and Dias, J.M., 2008. Numerical Modeling of the Hydrodynamic of the Ria Formosa and the Impact of the new Ancão Inlet Relocation. 6^a Assembleia Luso Espanhola de Geodesia e Geofísica, Tomar, Portugal, 11-14 février 2008.
- [RC.15] Sousa, M.C., **Bertin, X.**, Fortunato, Oliveira, A. and Dias, J.M., 2008. Numerical Modeling of the Pathways of Contaminants in the Ria Formosa and the Impact of the new Ancão Inlet Relocation. 6^a Assembleia Luso Espanhola de Geodesia e Geofísica, Tomar, Portugal, 11-14 février 2008.
- [RC.14] Oliveira, A., Fortunato, A., Rodrigues, A., **Bertin, X.**, Azevedo, A., Pinto, L. and Fernandes, J.P., 2008. Modelação integrada de processos físicos e de qualidade da água em zonas costeiras: abordagem e exemplos. 2^a Conferência nacional de métodos numéricos em mecânica de fluidos e termodinâmica 2008, Universidade de Aveiro, Portugal, 8 et 9 mai 2008.
- [RC.13] Oliveira, A., Fortunato, A., **Bertin, X.** and Rodrigues, M., 2007. Análise integrada de processos físicos e de qualidade da água em lagunas, 1º Seminário Sobre Conservação e Gestão de Zonas Húmidas, 12 de Outubro de 2007, Peniche, Portugal.
- [RC.12] **Bertin, X.**, Fortunato, A. and Oliveira, A., 2007. Modélisation morphodynamique de l'embouchure tidale d'Óbidos, Portugal. 11^{ème} congrès Français de sédimentologie, Universidade de Caen, octobre 2007.
- [RC.11] Allard, J., Chaumillon, E. and **Bertin, X.**, 2007. La progradation d'un flèche sableuse peut elle enregistrer des variations du climat de houle ? 11^{ème} congrès Français de sédimentologie, Universidade de Caen, octobre 2007.
- [RC.10] **Bertin X.**, Chaumillon Eric, Quicque Robin, Butel Rémi and Castelle Bruno, 2005. Estimation et variabilité interannuelle de la dérive littorale sur une plage dissipative , SW Oléron, France. 10^{ème} congrès Français de sédimentologie, Presqu'île de Giens, França, 11-13 octobre 2005.
- [RC.9] Chaumillon Eric, **Bertin Xavier**, Billeaud Isabelle, Libaud Jean-Baptiste and Weber Nicolas, 2005. Importance des études aux échelles millénaires et séculaires dans la compréhension de la dynamique sédimentaire actuelle des environnements côtiers : exemples sur les côtes Charentaises, France. 10^{ème} congrès Français de sédimentologie, Presqu'île de Giens, France, 11-13 octobre de 2005.
- [RC.8] Libaud Jean-Baptiste, Chaumillon Eric and **Xavier Bertin**, 2005. Evolution et processus de comblement millénaire et séculaire dans une baie tidale : exemple de la Baie de Marennes-Oléron, France. 10^{ème} congrès Français de sédimentologie, Presqu'île de Giens, França, 11-13 de Outubro de 2005.
- [RC.7] Idier Déborah, Pedreros Rodrigo, Sottolichio Aldo, Choppin Lorraine and **Bertin Xavier**, 2005. Importance de la houle dans la dynamique hydrosédimentaire des Pertuis Charentais. 10^{ème} congrès Français de sédimentologie, Presqu'île de Giens, France, 11-13 de Outubro de 2005.
- [RC.6] **Bertin X.**, Chaumillon E., Sottolochio A. and Nicolle A., 2004. Evolution d'une embouchure tidale en réponse au comblement de la baie associée : la baie de Marennes-Oléron et le Pertuis de

Maumusson (Littoral Atlantique, France). Zone atelier PEVS/INSU - Baie du mont Saint Michel et ses bassins versants - Vasière de Brouage. La Rochelle, 3-4 Novembre 2004.

- [RC.5] **Bertin X.** and Chaumillon E., 2004. New insights in shallow gas generation thank to VHR seismic and bathymetric data in the Marennes-Oléron bay, France. *IX^{ème} colloque d'océanographie du Golfe de Gascogne*, Pau, Mai 2004.
- [RC.4] **Bertin X.**, Chaumillon E. and Sottolichio, A., 2004. Evolution morphodynamique d'un système baie/ embouchure tidale: La Baie de Marennes-Oléron et le Pertuis de Maumusson, France. *Congrès de l'association des sédimentologues Français*, Bordeaux, octobre 2003.
- [RC.3] **Bertin, X.** and Chaumillon, E., 2004. Historical modelling of tidal circulation in bay and estuaries evidence the key role of bathymetric changes. *23rd IAS meeting of sedimentology*, Coimbra, Portugal, 15-17 septembre 2004.
- [RC.2] Chaumillon, E., **Bertin, X.**, Billeaud, I., Weber, and N., 2004. Very high resolution seismic profiling in shallow water environment: a new tool for high frequency environment changes recorded in coastal sediments. *23rd IAS meeting of sedimentology*, Coimbra, Portugal, 15-17 septembre 2004.
- [RC.1] **Bertin X.** and Chaumillon E., 2003. VHR seismic profiling records of last centuries sedimentary changes in a macrotidal bay (Marennes-Oléron Bay, Atlantic coast of France). *Prodelta technology forum, Deltech International workshop*, Venice, Italy, 5-9 mai 2003.

Other information

→ Supervision of PhD students.

- Ion Andonegui, 2017-2020 : Hydro-sedimentary dynamics of pre-littoral zones.
- Thomas Guérin, 2012-2016 : Long-term morphodynamic modelling of coastal zones.
- Jean-François Breilh, 2011-2014: marine floodings in the central part of the Bay of Biscay.
- Guillaume Dodet (2010-2013): morphodynamics of a wave-dominated inlet.

→ Supervision of Master students and engineers (both French and foreigners):

- Teddy Chataigner, 2016, Master 2. Dynamics of IG waves at a dissipative beach under storms.
- Rabia Demilah, 2015, Master 2 : generation and dissipation of IG waves at a dissipative beach.
- Sytske Stuij (TU Delft, The Netherlands), 2014 : morphodynamic modelling of a wave-dominated inlet.
- Marta Payo Payo (Cantabria University, Spain) , 2012-2013 : saisonnal cycle of the mean sea-level.
- Erwin Bergsma (TU Delft, The Netherlands), 2010-2011 : morphodynamic modelling of the Maumusson Inlet.
- Baptiste Mengual (2012-2013) : 3D numerical modelling of the circulation at a dissipative beach.
- Kai Li, 2011-2013, research engineer: development of a storm surge and marine flooding model.
- Jean Guimberteau, 2010-2011, engineer : modelling the water quality at beaches.
- Guillaume Dodet, 2008-2010, engineer: implementation of the WWIII model.
- Alphonse Nahon, 2008-2010, engineer: numerical modelling of tidal inlet morphodynamics.

- João Rosa, 2008-2010, Master 2: morphodynamic modelling of a sandpit.
- Magda de Sousa, 2007, Bachelor: numerical modelling of hydrodynamics in the Ria Formosa.
- Florian Ganthy, 2007, Master 1: numerical modelling of the tidal distortion in the Marennes-Oléron Bay.
- Antoine Deshouillères, 2006, Master 1: measurements of longshore transport in 3D using a new fluorescent tracer technique.
- Robin Quique, 2005, Master 1: measurement of sediment transport at a dissipative beach using fluorescent tracers.

→ Expert for international journals:

- <i>Continental Shelf Research</i>	: 2007, 2008, 2013 (2), 2014, 2015
- <i>Nature Communication</i>	: 2017
- <i>Geophysical Research Letters</i>	: 2018
- <i>Earth Surface Dynamics</i>	: 2013, 2017
- <i>Advances in Geosciences</i>	: 2013
- <i>Journal of Coastal research</i>	: 2015, 2016
- <i>International Journal of Climatology</i>	: 2012, 2013, 2015
- <i>Journal of Geophysical Research</i>	: 2014, 2015, 2016
- <i>Ocean Engineering</i>	: 2010, 2013
- <i>Ocean Modelling</i>	: 2008, 2010, 2011, 2012, 2013, 2014, 2016
- <i>Vertigo</i>	: 2013
- <i>Marine Pollution Bulletin</i>	: 2009
- <i>Marine Geology</i>	: 2009, 2017
- <i>Geo-marine letters</i>	: 2009
- <i>Estuarine Coastal and Shelf Science</i>	: 2015
- <i>Natural Hazard Earth System Science</i>	: 2017
- <i>Journal of Advances in Modeling Earth Systems</i>	: 2017

→ Participation to PhD jury:

- Pedro Guimarães, (15/01/2018), Ecole Centrale de Nantes (**rapporteur**)
- Arthur Robinet, (15/12/2017), University of Bordeaux (**examinateur**)
- Franck Mazas, (17/11/2017), University Paris-Est (**rapporteur**)
- Arnaud Doré, (11/12/2015), University of Bordeaux (**rapporteur**).
- Fabien Rétif, (17/11/2015), Université Montpellier (**rapporteur**).
- Adrian Martinez, (28/09/2015), Balearic University, Spain (**examinateur**)
- Ana Silva, (2014/12), Lisbon University, Portugal (**rapporteur**).
- Florence Toublanc, (13/12/2013), La Rochelle University (**invité**)
- Amélie Laugel, (11/12/2013), University Paris-Est (**examinateur**)
- Florent Birrien, (14/05/2013), University Bordeaux I (**examinateur**).
- Sandra Plecha, (16/12/2011), Aveiro University, Portugal (**rapporteur**)

→ Expert for research funding agencies:

- <i>French ANR</i>	: 2012, 2013
- <i>INSU Mistral</i>	: 2012
- <i>INSU Leffe/Manu</i>	: 2012
- <i>NSF (USA)</i>	: 2014
- <i>NWO (Pays-Bas)</i>	: 2017

→ Member of the scientific committee of conferences :

- *Morfodinâmica Estuarina e Costeira (Portugal) - MEC 2011*
- *OCEAN 2011(Spain)*
- *Génie Côtier Génie Civil 2010, 2012, 2014, 2016, 2018.*

→ Invitation for keynotes in international conferences and meetings:

- Bertin, X, 12/11/2015. Lições tiradas da submersão associada a tempestade Xynthia na parte central do Golfo de Biscaya. Keynote given at the final workshop of the project MOLINES organized by the Portuguese Civil Protection, Lisbon.
- Bertin, X., 12/06/2014. Storm surges and coastal flooding : status and challenges. Keynote given at the conference SIM-HYDRO 2014, Sofia-Antipolis.
- Bertin, X. Wave climate variability in the NE Atlantic Ocean over the last 6 decades. Workshop *Les littoraux à l'heure du changement climatique*, Rochefort – Brouage – La Rochelle, 18-20 novembre 2010.
- Bertin X., Silva, P. and Rosa, J., 2010. Modelling the morphodynamics of a sandpit and impacts on adjacent shorelines. 2nd international days on the degradation of coastal zones. Kenitra, 2-3 juillet 2010.

→ Foreign langages:

- Fluent in French, English and Portuguese.
- Scholar standard in German.