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## Curriculum vitae

### 1 Personal Details

Born in Eupen, Belgium on September 7, 1978; Belgian citizen

### 2 Research interests

- Data assimilation, in particular assimilation of high-frequency radar observations
- Operational oceanography
- Nested ocean models
- Satellite and *in situ* data analysis

### 3 Position

**2011-present:** Research Associate of the Belgian National Fund of Scientific Research (Chercheur Qualifié, F.R.S.-FNRS) at the University of Liège with Prof. Jean-Marie Beckers

**2007-2011:** Research Fellow of the Belgian National Fund of Scientific Research (Chargé de Recherches, F.R.S.-FNRS) at the University of Liège with Prof. Jean-Marie Beckers

**2004-2007:** Postdoctoral research at the University of South Florida with Prof. Robert H. Weisberg as Research Associate.

### 4 Educational Background

**2000-2004:** PhD in Oceanography, University of Liège, Belgium funded by the FRIA (Fond pour la formation à la Recherche dans l'Industrie et dans l'Agriculture). The dissertation is entitled "Assimilation of sea surface temperature and sea surface height in a two-way nested primitive equation model of the Ligurian Sea".

**March 2001:** "The Oxford/RAL Spring School in Quantitative Earth Observation" focused on data assimilation (from March 12 to March 23, 2001) and a presentation on the Extended Kalman Filter applied on a 1D hydrodynamic model.

**2000-2001:** Master in Modelling of the Marine Environment, University of Liège (Belgium) with very good pass.

**1997-2000:** MSc in Physics at the University of Liège (Belgium) with the greatest distinction.

## 5 Awards

- Outstanding Young Scientist Award of the European Geosciences Union (2010)

## 6 Grants

- Research grant for studying two months at the “Laboratoire des Ecoulements Geophysiques et Industriels” (Grenoble) from the Ministry of Education of the French Community of Belgium (from April 1 to May 31, 2002) allocated by competitive examination.
- Grant for participating to the 23rd General Assembly of the IUGG in Sapporo, Japan from the National Fund of Scientific Research (from June 30 to July 11, 2003)

## 7 Teaching

### 7.1 Lectures at the University of Liege

- “Data assimilation and inverse methods in oceanography” Master in Oceanography, University of Liège (since 2016; ongoing)
- “Structure and application of numerical ocean models”, Master in Oceanography, University of Liège (since 2008; ongoing)

### 7.2 Summer schools and seminars

- “Ensemble Kalman Filter” at the EOS-COST School on Data Assimilation and Data Analysis Methods (EOS-COST DAAM), Lecce, (Italy), 5 April 2016
- “DIVA beyond 2D” at the EOS-COST School on Data Assimilation and Data Analysis Methods (EOS-COST DAAM), Lecce, (Italy), 14 April 2016
- “Data assimilation in oceanography” at University of Brest (Brest, France), 10 - 14 December 2012
- “Data assimilation in coastal ocean models” at the 2nd Coastal Dynamics Modeling School, La-Londe les Maures (France), 23rd September 2011
- “Introduction to Physical Oceanography” for the pupils who won the competition “Concours Corsica” (Calvi, 28 September to 2 October 2009)
- “Statistical Analysis of Biological Data and Times-Series” in Varna entitled “Theory of optimal interpolation and variational analysis. Modeling of error covariances, parameter optimization and cross-validation” (21 July – 01 August 2008).

## 8 Supervision and mentoring of students and visiting scientists

- Subekti Mujiasih (PhD thesis, ULg)
- Martin Canter (PhD thesis, ULg)
- Pierre Dans (Master thesis, ULg)
- Delphine Fernandez Bruyère (Master thesis, ULg)
- Arthur Capet (PhD thesis, ULg)
- Alex Port (visiting scientist, GKSS, Germany)

## 9 Membership

- GODAE “Coastal Ocean and Shelf Seas Task Team”
- Associate member of the Belgian National Committee for Geodesy and Geophysics (Membre associé du Comité National Belge de Géodésie et de Géophysique) since 29 January 2009.

## 10 Projects

### 10.1 Participating as PI

**EMODNET Ingestion** Ingestion and safe-keeping of marine data (EU - EASME), 07/11/2016 – 6/11/2019

**SeaDataCloud** Pan-European infrastructure for marine and ocean data management (EU - H2020), 01/10/2016 – 30/09/2020

**UPSCALING** Propagating information back from coastal/regional models to CMEMS (EU - CMEMS), 01/01/2016 – 31/12/2017

**FaCE-It** Functional biodiversity in a Changing sedimentary Environment: Implications for biogeochemistry and food webs in a managerial setting (Belspo - BRAIN-be), 15/12/2015 – 14/12/2019

**PREDANTAR** Understanding and predicting Antarctic sea ice variability at the decadal timescale (Belspo project SD/CA/04A), 15/12/2010 – 28/05/2015

### 10.2 Participating as collaborator

**SOFT** (Satellite-based ocean forecasting): Development of a two-way nested-model of the Ligurian Sea with assimilation of sea surface temperature and sea surface height.

**SEACOOS** (SouthEast U.S. Atlantic Coastal Ocean Observing System): Implementation of a West Florida Shelf ROMS model.

**HYCOM-GODAE** (U.S. GODAE: Global Ocean Prediction with the Hybrid Coordinate Ocean Model (HYCOM)): Nesting of the West Florida Shelf ROMS mode in the North Atlantic HYCOM model.

**NOPP-CODAE** (Coastal Ocean Data Assimilation Experiment): Assimilation high-frequency radar surface currents in the West Florida Shelf ROMS model.

**ECOOP** (European COastal sea Operational observing and Forecasting): Assimilation high-frequency radar surface currents in the German Bight GETM model.

**SeaDataNet I** (Pan-European infrastructure for marine and ocean data management): Development of a web interface for using Data Interpolating Variational Analysis (Diva) and web-based visualization of climatologies (<http://gher-diva.phys.ulg.ac.be/>).

**EMODNET Chemistry I** (European Marine Observation and Data Network): Adaptation and development of variational inverse methods (DIVA) to chemical in situ observations.

**SANGOMA** A European project providing new developments in data assimilation for future operational forecasting and monitoring systems.

**SeaDataNet II** (Pan-European infrastructure for marine and ocean data management): Development of a web interface for using Data Interpolating Variational Analysis (Diva) and web-based visualization of climatologies (<http://gher-diva.phys.ulg.ac.be/>).

**EMODNET Chemistry II** (European Marine Observation and Data Network): Adaptation and development of variational inverse methods (DIVA) to chemical in situ observations and web-based product visualization.

**EMODNET Biology II** (European Marine Observation and Data Network): Adaptation and development of variational inverse methods (DIVA) to biological in situ observations.

## 11 Invited presentations and keynotes

- Invited presentation at the Global Ocean Week 2016 (Toulouse, France): “Stochastic parametrization of model errors using nested model in the context of data assimilation” (14 October 2016)
- Keynote at the EnKF workshop 2016 (Ulvik, Norway): “Local ensemble assimilation scheme with global constraints and conservation“ (20 - 22 June 2016)
- Keynote at the EMODnet Session (Ostende, Belgium): the power of combining data: “Data analysis and data products in EMODNET Chemistry” (21 October 2015)
- Invited presentation at the 3rd Remote Ocean Sensing Workshop from the Nato Undersea Research Centre (La Spezia, Italy): “Assimilation of High-Frequency Radar Surface Currents in a Nested Model of the Ligurian Sea“ (11 - 13 October 2011)
- Invited presentation at workshop on Instability properties of regional models: ensemble forecast, boundary forcing and assimilation by the Royal Meteorological Institute (Brussels, Belgium) “Ensemble smoother to estimate surface wind fields of a regional ocean model by assimilation of ocean currents” (25 November 2010)

- Invited presentation at Laboratoire de Sondages Electromagnétiques de l'Environnement Terrestre (Toulon, France): “Estimation of tidal boundary conditions and surface winds by assimilation of high-frequency radar surface currents in the German Bight” (22-23 September 2010).
- Invited presentation “Ensemble-based assimilation of high-frequency radar surface currents in regional ocean models” at the 2010 AGU, The Meeting of the Americas
- Invited presentation at Technical University of Lisbon (Lisbon, Portugal): “Assimilation of high-frequency radar current observations in the German Bight” (1 February 2010)
- Co-author of an invited presentation at the 2010 Ocean Science Meeting of the American Geophysical Union in Portland, Oregon, USA entitled “Climatological analysis of irregularly distributed data using Data Interpolating Variational Analysis (Diva)”.
- Invited participation to OPERA workshop as data assimilation expert (14-16 December 2009).
- Invited presentation at “University of South Florida” (Florida, USA) “Data assimilation and Kalman filtering” (2 December 2008)
- Invited presentation at the GKSS Research Center, Geesthacht, Germany entitled “A Nested Model of the West Florida Shelf: Assimilation of High-Frequency Radar Currents and study of Loop Current generated flow” (1 April 2008).
- Invited seminar at RSMAS, (Miami, Florida, USA): “A West Florida Shelf ROMS model nested into HYCOM, with applications to the 2005 red tide and ensemble-based assimilation of HF-Radar surface currents” (3 November 2006)
- Invited seminar at “Laboratoire des Ecoulements Geophysiques et Industriels” (Grenoble) entitled “Two-way nesting of ocean models: Application to the Ligurian Sea with a two times refined model grid” (2 July 2002).
- Invited seminar at the Catholic University of Louvain (Louvain-la-Neuve) entitled “Introduction to data assimilation methods in oceanography” (2 October 2001).

## 12 Service

- Guest editor of Ocean Dynamics the special issue of 48th Liege Colloquium (2016).
- Co-organizer and member of the scientific committee of 48th Liege Colloquium on “Submesoscale Processes: Mechanisms, Implications and new Frontiers” (2016).
- Guest editor of Ocean Dynamics the special issue of 47th Liege Colloquium (2015).
- Co-organizer and member of the scientific committee of 47th Liege Colloquium on “Marine Environmental Monitoring, Modelling and Prediction” (2015).
- Guest editor of Journal of Marine Systems for the special issue of 41st Liege Colloquium (2009).

- Co-organizer and member of the scientific committee of 41st Liege Colloquium on “Science-based management of the coastal waters” (2009).
- Reviewer for Nature, Journal of Marine Systems, Journal of Continental Shelf Research, Ocean Dynamics, Ocean Science, Dynamics of Atmospheres and Oceans, Ocean Modelling, Journal of Geophysical Research, Monthly Weather Review, Journal of Physical Oceanography, Nonlinear Processes in Geophysics
- Reviewer for the US National Science Foundation and CNRS.

## 13 Publications

### 13.1 Peer Reviewed Articles

Note: a continuously updated list is available [here](#).

- [1] **A. Barth**, S. Watelet, C. Troupin, A. Alvera-Azcárate, and J.-M. Beckers. *Oceanographic and Marine Cross-Domain Data Management for Sustainable Development*, chapter Analysis of Ocean in Situ Observations and Web-Based Visualization: From Individual Measurements to an Integrated View, pages 345–371. IGI Global, Hershey, PA, 2017.
- [2] A. Alvera-Azcárate, **A. Barth**, G. Parard, and J.-M. Beckers. Analysis of SMOS sea surface salinity data using DINEOF. *Remote Sensing of Environment*, 180:137 – 145, 2016. doi: [10.1016/j.rse.2016.02.044](https://doi.org/10.1016/j.rse.2016.02.044). Special Issue: ESA’s Soil Moisture and Ocean Salinity Mission - Achievements and Applications.
- [3] **A. Barth**, Y. Yan, A. Alvera-Azcárate, and J.-M. Beckers. Local ensemble assimilation scheme with global constraints and conservation. *Ocean Dynamics*, 66(12):1651–1664, 2016. doi: [10.1007/s10236-016-0999-y](https://doi.org/10.1007/s10236-016-0999-y).
- [4] M. Canter, **A. Barth**, and J.-M. Beckers. Correcting circulation biases in a lower-resolution global general circulation model with data assimilation. *Ocean Dynamics*, pages 1–18, 2016. doi: [10.1007/s10236-016-1022-3](https://doi.org/10.1007/s10236-016-1022-3).
- [5] H.-N. Huynh, A. Alvera-Azcárate, **A. Barth**, and J.-M. Beckers. Reconstruction and analysis of long-term satellite-derived sea surface temperature for the South China Sea. *Journal of Oceanography*, 72(5):707–726, 2016. doi: [10.1007/s10872-016-0365-1](https://doi.org/10.1007/s10872-016-0365-1).
- [6] L. Vandenbulcke, J.-M. Beckers, and **A. Barth**. Correction of inertial oscillations by assimilation of HF radar data in a model of the Ligurian Sea. *Ocean Dynamics*, pages 1–19, 2016. doi: [10.1007/s10236-016-1012-5](https://doi.org/10.1007/s10236-016-1012-5).
- [7] A. Alvera-Azcárate, Q. Vanhellefont, K. Ruddick, **A. Barth**, and J.-M. Beckers. Analysis of high frequency geostationary ocean colour data using DINEOF. *Estuarine, Coastal and Shelf Science*, 159:28 – 36, 2015. doi: [10.1016/j.ecss.2015.03.026](https://doi.org/10.1016/j.ecss.2015.03.026).
- [8] **A. Barth**, M. Canter, B. Van Schaeybroeck, S. Vannitsem, F. Massonnet, V. Zunz, P. Mathiot, A. Alvera-Azcárate, and J.-M. Beckers. Assimilation of sea surface temperature, sea ice

- concentration and sea ice drift in a model of the Southern Ocean. *Ocean Modelling*, 93:22 – 39, 2015. doi: [10.1016/j.ocemod.2015.07.011](https://doi.org/10.1016/j.ocemod.2015.07.011).
- [9] V.H. Kourafalou, P. De Mey, J. Staneva, N. Ayoub, **A. Barth**, Y. Chao, M. Cirano, J. Fiechter, M. Herzfeld, A. Kurapov, A.M. Moore, P. Oddo, J. Pullen, A. Van Der Westhuysen, and R. H. Weisberg. Coastal Ocean Forecasting: science foundation and user benefits. 8(1):s147–s167, 2015. doi: [10.1080/1755876X.2015.1022348](https://doi.org/10.1080/1755876X.2015.1022348).
- [10] L. Vandenbulcke and **A. Barth**. A stochastic operational forecasting system of the Black Sea: Technique and validation. *Ocean Modelling*, 93:7 – 21, 2015. doi: [10.1016/j.ocemod.2015.07.010](https://doi.org/10.1016/j.ocemod.2015.07.010).
- [11] Y. Yan, **A. Barth**, J. M. Beckers, G. Candille, J. M. Brankart, and P. Brasseur. Ensemble assimilation of ARGO temperature profile, sea surface temperature, and altimetric satellite data into an eddy permitting primitive equation model of the North Atlantic Ocean. *Journal of Geophysical Research: Oceans*, 120(7):5134–5157, 2015. doi: [10.1002/2014JC010349](https://doi.org/10.1002/2014JC010349).
- [12] **A. Barth**, J.-M. Beckers, C. Troupin, A. Alvera-Azcárate, and L. Vandenbulcke. divand-1.0: n-dimensional variational data analysis for ocean observations. *Geoscientific Model Development*, 7(1):225–241, 2014. doi: [10.5194/gmd-7-225-2014](https://doi.org/10.5194/gmd-7-225-2014).
- [13] J.-M. Beckers, **A. Barth**, I. Tomazic, and A. Alvera-Azcárate. A method to generate fully multi-scale optimal interpolation by combining efficient single process analyses, illustrated by a DINEOF analysis spiced with a local optimal interpolation. *Ocean Science*, 10(5):845–862, 2014. doi: [10.5194/os-10-845-2014](https://doi.org/10.5194/os-10-845-2014).
- [14] J.-M. Beckers, **A. Barth**, C. Troupin, and A. Alvera-Azcárate. Approximate and efficient methods to assess error fields in spatial gridding with data interpolating variational analysis (DIVA). *Journal of Atmospheric and Oceanic Technology*, 31:515–530, 2014. doi: [10.1175/JTECH-D-13-00130.1](https://doi.org/10.1175/JTECH-D-13-00130.1).
- [15] J. Marmain, A. Molcard, P. Forget, **A. Barth**, and Y. Ourmières. Assimilation of HF radar surface currents to optimize forcing in the northwestern Mediterranean Sea. *Nonlinear Processes Geophysics*, 21:659–675, 2014. doi: [10.5194/npg-21-659-2014](https://doi.org/10.5194/npg-21-659-2014).
- [16] Y. Yan, **A. Barth**, and J.M. Beckers. Comparison of different assimilation schemes in a sequential Kalman filter assimilation system. *Ocean Modelling*, 73(0):123–137, 2014. doi: [10.1016/j.ocemod.2013.11.002](https://doi.org/10.1016/j.ocemod.2013.11.002).
- [17] A. Alvera-Azcárate, **A. Barth**, D. Sirjacobs, and J.-M. Beckers. Outlier detection in satellite data using spatial coherence. *Remote Sensing of Environment*, 119:84–91, 2012. doi: [10.1016/j.rse.2011.12.009](https://doi.org/10.1016/j.rse.2011.12.009).
- [18] A. Capet, **A. Barth**, J.-M. Beckers, and M. Grégoire. Interannual variability of Black Sea’s hydrodynamics and connection to atmospheric patterns. *Deep-Sea Research Part II, Topical Studies in Oceanography*, 77–80:128–142, 2012. doi: [10.1016/j.dsr2.2012.04.010](https://doi.org/10.1016/j.dsr2.2012.04.010).
- [19] C. Troupin, **A. Barth**, D. Sirjacobs, M. Ouberdous, J.-M. Brankart, P. Brasseur, M. Rixen, A. Alvera-Azcárate, M. Belounis, A. Capet, F. Lenartz, M.-E. Toussaint, and J.-M. Beckers.

- Generation of analysis and consistent error fields using the Data Interpolating Variational Analysis (DIVA). *Ocean Modelling*, 52–53:90–101, 2012. doi: [10.1016/j.ocemod.2012.05.002](https://doi.org/10.1016/j.ocemod.2012.05.002).
- [20] A. Alvera-Azcárate, **A. Barth**, D. Sirjacobs, F. Lenartz, and J.-M. Beckers. Data Interpolating Empirical Orthogonal Functions (DINEOF): a tool for geophysical data analyses. *Special Issue for the IMDIS 2008 conference. Mediterranean Marine Science*, 12(3):5–11, 2011.
- [21] A. Alvera-Azcárate, **A. Barth**, R. H. Weisberg, J. J. Castañeda, L. Vandenbulcke, and J.-M. Beckers. Thermocline characterization in the Cariaco basin: a modelling study of the thermocline annual variation and its relation with winds and chlorophyll-a concentration. *Continental Shelf Research*, 31:73–84, 2011. doi: [10.1016/j.csr.2010.11.006](https://doi.org/10.1016/j.csr.2010.11.006).
- [22] A. Alvera-Azcárate, C. Troupin, **A. Barth**, and J.-M. Beckers. Comparison between satellite and in situ sea surface temperature data in the Western Mediterranean Sea. *Ocean Dynamics*, 61:767–778, 2011. doi: [10.1007/s10236-011-0403-x](https://doi.org/10.1007/s10236-011-0403-x).
- [23] **A. Barth**, A. Alvera-Azcárate, J.-M. Beckers, J. Staneva, E. V. Stanev, and J. Schulz-Stellenfleth. Correcting surface winds by assimilating High-Frequency Radar surface currents in the German Bight. *Ocean Dynamics*, 61(5):599–610, 2011. doi: [10.1007/s10236-010-0369-0](https://doi.org/10.1007/s10236-010-0369-0).
- [24] D. Sirjacobs, A. Alvera-Azcárate, **A. Barth**, G. Lacroix, Y. Park, B. Nechad, K. Ruddick, and J.-M. Beckers. Cloud filling of ocean color and sea surface temperature remote sensing products over the southern north sea by the data interpolating empirical orthogonal functions methodology. *Journal of Sea Research*, 65(1):114–130, 2011. doi: [10.1016/j.seares.2010.08.002](https://doi.org/10.1016/j.seares.2010.08.002).
- [25] **A. Barth**, A. Alvera-Azcárate, K.-W. Gurgel, J. Staneva, A. Port, J.-M. Beckers, and E. V. Stanev. Ensemble perturbation smoother for optimizing tidal boundary conditions by assimilation of High-Frequency radar surface currents - application to the German Bight. *Ocean Science*, 6(1):161–178, 2010. doi: [10.5194/os-6-161-2010](https://doi.org/10.5194/os-6-161-2010).
- [26] **A. Barth**, A. Alvera-Azcárate, C. Troupin, M. Ouberdous, and J.-M. Beckers. A web interface for gridding arbitrarily distributed in situ data based on Data-Interpolating Variational Analysis (Diva). *Advances in Geosciences*, 28:29–37, 2010. doi: [10.5194/adgeo-28-29-2010](https://doi.org/10.5194/adgeo-28-29-2010).
- [27] F. Lenartz, B. Mourre, **A. Barth**, J.-M. Beckers, L. Vandenbulcke, and M. Rixen. Enhanced ocean temperature forecast skills through 3-D super-ensemble multi-model fusion. *Geophysical Research Letters*, 37:L19606, 2010. doi: [10.1029/2010GL044591](https://doi.org/10.1029/2010GL044591).
- [28] C. Troupin, F. Machin, M. Ouberdous, D. Sirjacobs, **A. Barth**, and J.-M. Beckers. High-resolution climatology of the north-east atlantic using data-interpolating variational analysis (Diva). *Journal of Geophysical Research*, 115:C08005, 2010. doi: [10.1029/2009JC005512](https://doi.org/10.1029/2009JC005512).
- [29] A. Alvera-Azcárate, **A. Barth**, D. Sirjacobs, and J.-M. Beckers. Enhancing temporal correlations in EOF expansions for the reconstruction of missing data using DINEOF. *Ocean Science*, 5:475–485, 2009. doi: [10.5194/os-5-475-2009](https://doi.org/10.5194/os-5-475-2009).
- [30] A. Alvera-Azcárate, **A. Barth**, and R. H. Weisberg. A nested model of the Cariaco Basin (Venezuela): description of the basin interior hydrography and interactions with the open ocean. *Ocean Dynamics*, 59:97–120, 2009. doi: [10.1007/s10236-008-0169-y](https://doi.org/10.1007/s10236-008-0169-y).



- [31] A. Alvera-Azcárate, **A. Barth**, and R. H. Weisberg. The surface circulation of the Caribbean Sea and the Gulf of Mexico as inferred from satellite altimetry. *Journal of Physical Oceanography*, 39:640–657, 2009. doi: [10.1175/2008JPO3765.1](https://doi.org/10.1175/2008JPO3765.1).
- [32] **A. Barth**, A. Alvera-Azcárate, J.-M. Beckers, R. H. Weisberg, L. Vandenbulcke, F. Lenartz, and M. Rixen. Dynamically constrained ensemble perturbations - application to tides on the West Florida Shelf. *Ocean Science*, 5(3):259–270, 2009. doi: [10.5194/os-5-259-2009](https://doi.org/10.5194/os-5-259-2009).
- [33] E. P. Chassignet, H. E. Hurlburt, E. J. Metzger, O. M. Smedstad, J. Cummings, G. R. Halliwell, R. Bleck, R. Baraille, A. J. Wallcraft, C. Lozano, H. L. Tolman, A. Srinivasan, S. Hankin, P. Cornillon, R. Weisberg, **A. Barth**, R. He, F. Werner, and J. Wilkin. U.S. GODAE: Global Ocean Prediction with the HYbrid Coordinate Ocean Model (HYCOM). *Oceanography*, 22:64–75, 2009. doi: [10.5670/oceanog.2009.39](https://doi.org/10.5670/oceanog.2009.39).
- [34] G. R. Halliwell, **A. Barth**, R. H. Weisberg, P. Hogan, O. M. Smedstad, and J. Cummings. Impact of GODAE products on nested HYCOM simulations of the West Florida Shelf. *Ocean Dynamics*, 59:139–155, 2009. doi: [10.1007/s10236-008-0173-2](https://doi.org/10.1007/s10236-008-0173-2).
- [35] L. Vandenbulcke, J.-M. Beckers, F. Lenartz, **A. Barth**, P.-M. Poulain, M. Aidonidis, J. Meyrat, F. Ardhuin, M. Tonani, C. Fratianni, L. Torrisi, D. Pallela, J. Chiggiato, M. Tudor, J.W. Book, P. Martin, G. Peggion, and M. Rixen. Super-Ensemble techniques: application to surface drift prediction. *Progress in Oceanography*, 82(3):149–167, 2009. doi: [10.1016/j.pocean.2009.06.002](https://doi.org/10.1016/j.pocean.2009.06.002).
- [36] R. H. Weisberg, **A. Barth**, A. Alvera-Azcárate, and L. Zheng. A coordinated coastal ocean observing and modeling system for the West Florida Continental Shelf. *Harmful Algae*, 8(4):585–597, 2009. doi: [10.1016/j.hal.2008.11.003](https://doi.org/10.1016/j.hal.2008.11.003).
- [37] **A. Barth**, A. Alvera-Azcárate, and R. H. Weisberg. A nested model study of the Loop Current generated variability and its impact on the West Florida Shelf. *Journal of Geophysical Research*, 113:C05009, 2008. doi: [10.1029/2007JC004492](https://doi.org/10.1029/2007JC004492).
- [38] **A. Barth**, A. Alvera-Azcárate, and R. H. Weisberg. Assimilation of high-frequency radar currents in a nested model of the West Florida Shelf. *Journal of Geophysical Research*, 113:C08033, 2008. doi: [10.1029/2007JC004585](https://doi.org/10.1029/2007JC004585).
- [39] **A. Barth**, A. Alvera-Azcárate, and R. H. Weisberg. Benefit of nesting a regional model into a large-scale ocean model instead of climatology. Application to the West Florida Shelf. *Continental Shelf Research*, 28:561–573, 2008. doi: [10.1016/j.csr.2007.11.004](https://doi.org/10.1016/j.csr.2007.11.004).
- [40] L. Vandenbulcke, M. Rixen, J.-M. Beckers, A. Alvera-Azcárate, and **A. Barth**. An analysis of the error space of a high-resolution implementation of the GHER hydrodynamic model in the Mediterranean Sea. *Ocean Modelling*, 24(1-2):46–64, 2008. doi: [10.1016/j.ocemod.2008.05.007](https://doi.org/10.1016/j.ocemod.2008.05.007).
- [41] A. Alvera-Azcárate, **A. Barth**, J.-M. Beckers, and R. H. Weisberg. Multivariate reconstruction of missing data in sea surface temperature, chlorophyll and wind satellite field. *Journal of Geophysical Research*, 112:C03008, 2007. doi: [10.1029/2006JC003660](https://doi.org/10.1029/2006JC003660).

- [42] A. Alvera-Azcárate, **A. Barth**, Z. Ben Bouallègue, M. Rixen, and J.-M. Beckers. Forecast Verification of a 3D model of the Ligurian Sea. The use of Discrete Wavelet Transforms in the skill assessment of spatial forecasts. *Journal of Marine Systems*, 65(1-4):460–483, 2007. doi: [10.1016/j.jmarsys.2005.09.015](https://doi.org/10.1016/j.jmarsys.2005.09.015).
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## 13.2 Presentations

More than 100 presentations as author or co-author on various conferences and workshops (EGU, AGU, Liège Colloquium, IUGG, ...).

## 14 Languages

- German: mother tongue
- French, English: fluent
- Spanish: basic level

## 15 Programming Languages

- Fortran, Julia, Matlab, GNU Octave, Shell, Linux/UNIX computing environment: very good knowledge
- Good knowledge of program parallelization with OpenMP and MPI
- Python, C/C++, Javascript and web programming: good knowledge