

List of peer-reviewed publications (in reverse chronological order)

- [1] A. Barth, A. Alvera-Azcárate, C. Troupin, and J.-M. Beckers, 2022. DINCAE 2: multivariate convolutional neural network with error estimates to reconstruct sea surface temperature satellite and altimetry observations. *Geoscientific Model Development Discussions*, 2021:1–26. doi:[10.5194/gmd-2021-353](https://doi.org/10.5194/gmd-2021-353). URL <https://gmd.copernicus.org/preprints/gmd-2021-353/>.
- [2] A. Alvera-Azcárate, D. Van der Zande, A. Barth, C. Troupin, S. Martin, and J.-M. Beckers, Sep 2021. Analysis of 23 Years of Daily Cloud-Free Chlorophyll and Suspended Particulate Matter in the Greater North Sea. *Frontiers in Marine Science*, 8. ISSN 2296-7745. doi:[10.3389/fmars.2021.707632](https://doi.org/10.3389/fmars.2021.707632). URL <http://dx.doi.org/10.3389/fmars.2021.707632>.
- [3] A. Alvera-Azcárate, D. Van der Zande, A. Barth, J. F. Cardoso dos Santos, C. Troupin, and J.-M. Beckers, Feb 2021. Detection of shadows in high spatial resolution ocean satellite data using DINEOF. *Remote Sensing of Environment*, 253:112229. ISSN 0034-4257. doi:[10.1016/j.rse.2020.112229](https://doi.org/10.1016/j.rse.2020.112229). URL <http://dx.doi.org/10.1016/j.rse.2020.112229>.
- [4] A. Barth, C. Troupin, E. Reyes, A. Alvera-Azcárate, J.-M. Beckers, and J. Tintoré, 2021. Variational interpolation of high-frequency radar surface currents using DIVAnd. *Ocean Dynamics*. doi:[10.1007/s10236-020-01432-x](https://doi.org/10.1007/s10236-020-01432-x). URL <http://hdl.handle.net/2268/253954>. In press.
- [5] M. Belgacem, K. Schroeder, A. Barth, C. Troupin, B. Pavoni, P. Raimbault, N. Garcia, M. Borghini, and J. Chiggiato, Dec 2021. Climatological distribution of dissolved inorganic nutrients in the western Mediterranean Sea (1981–2017). *Earth System Science Data*, 13(12):5915–5949. ISSN 1866-3516. doi:[10.5194/essd-13-5915-2021](https://doi.org/10.5194/essd-13-5915-2021). URL <http://dx.doi.org/10.5194/essd-13-5915-2021>.
- [6] K. Shahzadi, N. Pinardi, A. Barth, C. Troupin, V. Lyubartsev, and S. Simoncelli, Aug 2021. A new global ocean climatology. *Frontiers in Environmental Science*, 9. ISSN 2296-665X. doi:[10.3389/fenvs.2021.711363](https://doi.org/10.3389/fenvs.2021.711363). URL <http://dx.doi.org/10.3389/fenvs.2021.711363>.
- [7] A. Alvera-Azcárate, C. Troupin, H. Goosse, M. J. McPhaden, and J.-M. Beckers, Dec 2020. Editorial to the Liège Colloquium Special Issue: Long-term studies in oceanography – a celebration of 50 years of science at the Liège Colloquium (1969 – 2018). *Ocean Dynamics*, 71(1):119–123. ISSN 1616-7228. doi:[10.1007/s10236-020-01421-0](https://doi.org/10.1007/s10236-020-01421-0). URL <https://link.springer.com/article/10.1007/s10236-020-01421-0>.
- [8] A. Barth, A. Alvera-Azcárate, M. Licer, and J.-M. Beckers, Mar 2020. DINCAE 1.0: a convolutional neural network with error estimates to reconstruct sea surface temperature satellite observations. *Geoscientific Model Development*, 13(3):1609–1622. ISSN 1991-9603. doi:[10.5194/gmd-13-1609-2020](https://doi.org/10.5194/gmd-13-1609-2020). URL <https://gmd.copernicus.org/articles/13/1609/2020/>.
- [9] S. Ruiz, M. Claret, A. Pascual, A. Olita, C. Troupin, A. Capet, A. Tovar-Sánchez, J. Allen, P.-M. Poulain, J. Tintoré, and A. Mahadevan, 2019. Effects of Oceanic Mesoscale and Submesoscale Frontal Processes on the Vertical Transport of Phytoplankton. *Journal of Geophysical Research*, 124(8):5999–6014. doi:[10.1029/2019JC015034](https://doi.org/10.1029/2019JC015034). URL <https://agupubs.onlinelibrary.wiley.com/doi/abs/10.1029/2019JC015034>.
- [10] C. Troupin, A. Pascual, S. Ruiz, A. Olita, B. Casas, F. Margirier, P.-M. Poulain, G. Notarstefano, M. Torner, J. G. Fernández, M. A. Rújula, C. Muñoz, E. Alou, I. Ruiz, A. Tovar-Sánchez, J. T. Allen, A. Mahadevan, and J. Tintoré, Jan 2019. The AlborEX dataset: sampling of sub-mesoscale features in the Alboran Sea. *Earth System Science Data*, 11(1):129–145. ISSN 1866-3516. doi:[10.5194/essd-11-129-2019](https://doi.org/10.5194/essd-11-129-2019). URL <https://www.earth-syst-sci-data.net/11/129/2019/>.
- [11] A. Barth, A. Mahadevan, A. Pascual, S. Ruiz, and C. Troupin, 2018. The 48th Liege Colloquium: Submesoscale processes: mechanisms, implications, and new frontiers. *Ocean Dynamics*, 68(8):1067–1069. doi:[10.1007/s10236-018-1173-5](https://doi.org/10.1007/s10236-018-1173-5). URL <https://link.springer.com/article/10.1007/s10236-018-1173-5>.
- [12] A. Iona, A. Theodorou, S. Sofianos, S. Watelet, C. Troupin, and J.-M. Beckers, 2018. Mediterranean Sea climatic indices: monitoring long-term variability and climate changes. *Earth System Science Data*, 10(4):1829–1842. doi:[10.5194/essd-10-1829-2018](https://doi.org/10.5194/essd-10-1829-2018). URL <https://essd.copernicus.org/articles/10/1829/2018/>.

- [13] A. Iona, A. Theodorou, S. Watelet, C. Troupin, J.-M. Beckers, and S. Simoncelli, Jul 2018. Mediterranean Sea Hydrographic Atlas: towards optimal data analysis by including time-dependent statistical parameters. *Earth System Science Data*, 10(3):1281–1300. ISSN 1866-3516. doi:[10.5194/essd-10-1281-2018](https://doi.org/10.5194/essd-10-1281-2018). URL <https://www.earth-syst-sci-data.net/10/1281/2018/>.
- [14] M. Licer, B. Mourre, C. Troupin, A. Kriemeyer, A. Jansá, and J. Tintoré, Mar 2017. Numerical study of Balearic meteotsunami generation and propagation under synthetic gravity wave forcing. *Ocean Modelling*, 111:38–45. ISSN 1463-5003. doi:[10.1016/j.ocemod.2017.02.001](https://doi.org/10.1016/j.ocemod.2017.02.001). URL <http://www.sciencedirect.com/science/article/pii/S1463500317300136>.
- [15] A. Pascual, S. Ruiz, A. Olita, C. Troupin, M. Claret, B. Casas, B. Mourre, P.-M. Poulain, A. Tovar-Sanchez, A. Capet, E. Mason, J. Allen, A. Mahadevan, and J. Tintoré, 2017. A multiplatform experiment to unravel meso- and submesoscale processes in an intense front (AlborEx). *Frontiers in Marine Science*, 4(39):1–16. doi:[10.3389/fmars.2017.00039](https://doi.org/10.3389/fmars.2017.00039). URL <http://journal.frontiersin.org/article/10.3389/fmars.2017.00039/full>.
- [16] M. Juza, R. Escudier, A. Pascual, M.-I. Pujol, G. Taburet, C. Troupin, B. Mourre, and J. Tintoré, 2016. Impacts of reprocessed altimetry on the surface circulation and variability of the Western Alboran Gyre. *Advances in Space Research*, 58(3):277–288. doi:[10.1016/j.asr.2016.05.026](https://doi.org/10.1016/j.asr.2016.05.026). URL <http://www.sciencedirect.com/science/article/pii/S0273117716302125>.
- [17] M. Juza, B. Mourre, L. Renault, S. Gómara, K. Sebastián, S. Lora, J. P. Beltran, B. Frontera, B. Garau, C. Troupin, M. Torner, E. Heslop, B. Casas, R. Escudier, G. Vizoso, and J. Tintoré, 2016. SOCIB operational ocean forecasting system and multi-platform validation in the Western Mediterranean Sea. *Journal of Operational Oceanography*, 9(sup1):s155–s166. doi:[10.1080/1755876X.2015.1117764](https://doi.org/10.1080/1755876X.2015.1117764). URL <http://www.tandfonline.com/doi/full/10.1080/1755876X.2015.1117764#.V4M5xP7HjGc>.
- [18] M. Sotillo, E. Garcia-Ladona, A. Orfila, P. Rodríguez-Rubio, J. C. Maraver, D. Conti, E. Padorno, J. Jiménez, E. Capó, F. Pérez, J. Sayol, F. J. de los Santos, A. Amo, A. Rietz, C. Troupin, J. Tintoré, and E. Álvarez Fanjul, 2016. The MEDESS-GIB database: Tracking the Atlantic water inflow. *Earth System Science Data*, 8:141–149. doi:[10.5194/essd-8-141-2016](https://doi.org/10.5194/essd-8-141-2016). URL <http://www.earth-syst-sci-data.net/8/141/2016/>.
- [19] A. Pascual, A. Lana, C. Troupin, S. Ruiz, Y. Faugère, R. Escudier, and J. Tintoré, 2015. Assessing SARAL/AltiKa near-real time data in the coastal zone: comparisons with HF radar and Jason-2 observations. *Marine Geodesy*, 38(Supplement 1):260–276. doi:[10.1080/01490419.2015.1019656](https://doi.org/10.1080/01490419.2015.1019656). URL <http://www.tandfonline.com/doi/full/10.1080/01490419.2015.1019656>.
- [20] P. Sangrà, C. Troupin, B. Barreiro-González, E. D. Barton, A. Orbi, and J. Arístegui, May 2015. The Cape Ghir filament system in August 2009 (NW Africa). *Journal of Geophysical Research*, 120(6):4516–4533. ISSN 2169-9275. doi:[10.1002/2014jc010514](https://doi.org/10.1002/2014jc010514). URL <http://onlinelibrary.wiley.com/doi/10.1002/2014JC010514/full>.
- [21] C. Troupin, J. Belltran, E. Heslop, M. Torner, B. Garau, J. Allen, S. Ruiz, and J. Tintoré, 2015. A toolbox for glider data processing and management. *Methods in Oceanography*, 13-14:13–23. doi:[10.1016/j.mio.2016.01.001](https://doi.org/10.1016/j.mio.2016.01.001). URL <http://www.sciencedirect.com/science/article/pii/S2211122015300207>.
- [22] C. Troupin, A. Pascual, G. Valladeau, I. Pujol, A. Lana, E. Heslop, S. Ruiz, M. Torner, N. Picot, and J. Tintoré, 2015. Illustration of the emerging capabilities of SARAL/AltiKa in the coastal zone using a multi-platform approach. *Advances in Space Research*, 55(1):51–59. doi:[10.1016/j.asr.2014.09.011](https://doi.org/10.1016/j.asr.2014.09.011). URL <http://www.sciencedirect.com/science/article/pii/S0273117714005754>.
- [23] A. Barth, J.-M. Beckers, C. Troupin, A. Alvera-Azcárate, and L. Vandenbulcke, 2014. divand-1.0: n-dimensional variational data analysis for ocean observations. *Geoscientific Model Development*, 7:225–241. doi:[10.5194/gmd-7-225-2014](https://doi.org/10.5194/gmd-7-225-2014). URL <http://www.geosci-model-dev.net/7/225/2014/gmd-7-225-2014.html>.
- [24] J.-M. Beckers, A. Barth, C. Troupin, and A. Alvera-Azcárate, February 2014. Approximate and efficient methods to assess error fields in spatial gridding with DIVA (Data Interpolating Variational Analysis). *Journal of Atmospheric and Oceanic Technology*, 31(2):515–530. doi:[10.1175/JTECH-D-13-00130.1](https://doi.org/10.1175/JTECH-D-13-00130.1). URL <http://journals.ametsoc.org/doi/abs/10.1175/JTECH-D-13-00130.1>.

- [25] A. Capet, E. Mason, V. Rossi, C. Troupin, Y. Faugère, I. Pujol, and A. Pascual, 2014. Implications of refined altimetry on estimates of mesoscale activity and eddy-driven offshore transport in the Eastern Boundary Upwelling Systems. *Geophysical Research Letters*, 41(21):7602–7610. doi:[10.1002/2014GL061770](https://doi.org/10.1002/2014GL061770). URL <http://onlinelibrary.wiley.com/doi/10.1002/2014GL061770/abstract>.
- [26] A. Capet, C. Troupin, J. Carstensen, M. Grégoire, and J.-M. Beckers, January 2014. Untangling spatial and temporal trends in the variability of the Black Sea Cold Intermediate Layer and mixed Layer Depth using the DIVA detrending procedure. *Ocean Dynamics*, 64(3):315–324. doi:[10.1007/s10236-013-0683-4](https://doi.org/10.1007/s10236-013-0683-4). URL <http://link.springer.com/article/10.1007/s10236-013-0683-4>.
- [27] M. Benavides, J. Arístegui, N. S. R. Agawin, X. A. Álvarez Salgado, M. Álvarez, and C. Troupin, 2013. Low contribution of N₂ fixation to new production and excess nitrogen in the subtropical northeast Atlantic margin. *Deep-Sea Research I*, 81(0):36–48. ISSN 0967-0637. doi:[10.1016/j.dsr.2013.07.004](https://doi.org/10.1016/j.dsr.2013.07.004). URL <http://www.sciencedirect.com/science/article/pii/S0967063713001386>.
- [28] C. Troupin, E. Mason, J.-M. Beckers, and P. Sangrà, 2012. Generation of the Cape Ghir upwelling filament: a numerical study. *Ocean Modelling*, 41:1–15. doi:[10.1016/j.ocemod.2011.09.001](https://doi.org/10.1016/j.ocemod.2011.09.001). URL <http://www.sciencedirect.com/science/article/pii/S1463500311001557>.
- [29] C. Troupin, D. Sirjacobs, M. Rixen, P. Brasseur, J.-M. Brankart, A. Barth, A. Alvera-Azcárate, A. Capet, M. Ouberdous, F. Lenartz, M.-E. Toussaint, and J.-M. Beckers, 2012. Generation of analysis and consistent error fields using the Data Interpolating Variational Analysis (Diva). *Ocean Modelling*, 52–53:90–101. doi:[10.1016/j.ocemod.2012.05.002](https://doi.org/10.1016/j.ocemod.2012.05.002). URL <http://www.sciencedirect.com/science/article/pii/S1463500312000790>.
- [30] L. Tyberghein, H. Verbruggen, K. Pauly, C. Troupin, F. Mineur, and O. De Clerck, 2012. ORACLE: a global environmental dataset for marine species distribution modeling. *Global Ecology and Biogeography*, 21(2):272–281. doi:[10.1111/j.1466-8238.2011.00656.x](https://doi.org/10.1111/j.1466-8238.2011.00656.x). URL <http://onlinelibrary.wiley.com/doi/10.1111/j.1466-8238.2011.00656.x/pdf>.
- [31] A. Alvera-Azcárate, C. Troupin, A. Barth, and J.-M. Beckers, 2011. Comparison between satellite and in situ sea surface temperature data in the Western Mediterranean Sea. *Ocean Dynamics*, 61:767–778. ISSN 1616-7341. doi:[10.1007/s10236-011-0403-x](https://doi.org/10.1007/s10236-011-0403-x). URL <http://www.springerlink.com/content/r5784271357u5400/>.
- [32] E. Mason, F. Colas, J. Molemaker, A. F. Shchepetkin, C. Troupin, J. C. McWilliams, and P. Sangrà, 2011. Seasonal variability of the Canary Current: a numerical study. *Journal of Geophysical Research*, 116(C6):C06001. doi:[10.1029/2010JC006665](https://doi.org/10.1029/2010JC006665). URL <https://agupubs.onlinelibrary.wiley.com/doi/epdf/10.1029/2010JC006665>.
- [33] C. Troupin, September 2011. *Study of the Cape Ghir upwelling filament using variational data analysis and regional numerical model*. Ph.D. thesis, University of Liège. URL <http://hdl.handle.net/2268/105400>. 224 pp.
- [34] A. Barth, A. Alvera-Azcárate, C. Troupin, M. Ouberdous, and J.-M. Beckers, 2010. A web interface for gridding arbitrarily distributed in situ data based on Data-Interpolating Variational Analysis (DIVA). *Advances in Geosciences*, 28:29–37. doi:[10.5194/adgeo-28-29-2010](https://doi.org/10.5194/adgeo-28-29-2010). URL www.adv-geosci.net/28/29/2010/.
- [35] F. Lenartz, J.-M. Beckers, J. Chiggiato, B. Mourre, C. Troupin, L. Vandenbulcke, and M. Rixen, 2010. Super-ensemble techniques applied to wave forecast: performance and limitations. *Ocean Science*, 6(2):595–604. doi:[10.5194/os-6-595-2010](https://doi.org/10.5194/os-6-595-2010). URL <http://www.ocean-sci.net/6/595/2010/os-6-595-2010.html>.
- [36] C. Troupin, F. Machín, M. Ouberdous, D. Sirjacobs, A. Barth, and J.-M. Beckers, 2010. High-resolution climatology of the north-east Atlantic using Data-Interpolating Variational Analysis (Diva). *Journal of Geophysical Research*, 115(C8):C08005. doi:[10.1029/2009JC005512](https://doi.org/10.1029/2009JC005512). URL <http://onlinelibrary.wiley.com/doi/10.1029/2009JC005512/epdf>.
- [37] C. Troupin, P. Sangrà, and J. Arístegui, 2010. Seasonal variability of the oceanic upper layer and its modulation of biological cycles in the Canary Island region. *Journal of Marine Systems*, 80(3–4):172–183. doi:[10.1016/j.jmarsys.2009.10.007](https://doi.org/10.1016/j.jmarsys.2009.10.007). URL <http://www.sciencedirect.com/science/article/B6VF5-4XMKB67-1/2/326bcf54e891969eb6191ec534805d35>.