

## List of peer-reviewed publications

- [1] C. Troupin, A. Pascual, S. Ruiz, A. Olita, B. Casas, F. Margirier, P.-M. Poulain, G. Notarstefano, M. Torner, J. G. Fernández, M. J. 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. URL <https://www.earth-syst-sci-data.net/11/129/2019/>.
- [2] 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. URL <https://link.springer.com/article/10.1007/s10236-018-1173-5>.
- [3] 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. URL <https://www.earth-syst-sci-data.net/10/1829/2018/essd-10-1829-2018.html>.
- [4] 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. URL <https://www.earth-syst-sci-data.net/10/1281/2018/>.
- [5] S. Ruiz, M. Claret, A. Pascual, A. Olita, C. Troupin, A. Capet, A. Tovar-Sanchez, J. Allen, P.-M. Poulain, J. Tintoré, and A. Mahadevan, 2018. Effects of oceanic meso- and submeso-scale frontal processes on the vertical transport of phytoplankton. *Journal of Geophysical Research*. Under revision.
- [6] F. Lenartz, C. Troupin, and W. Lefebvre, Sep 2017. Data interpolating variational analysis for the generation of atmospheric pollution maps at various scales. In *International Technical Meeting on Air Pollution Modelling and its Application*, pages 231–235. Springer International Publishing. ISBN 9783319576459. ISSN 2213-8692. doi:10.1007/978-3-319-57645-9\_37. URL [https://link.springer.com/chapter/10.1007/978-3-319-57645-9\\_37](https://link.springer.com/chapter/10.1007/978-3-319-57645-9_37).
- [7] 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. URL <http://www.sciencedirect.com/science/article/pii/S1463500317300136>.
- [8] 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. URL <http://journal.frontiersin.org/article/10.3389/fmars.2017.00039/full>.
- [9] A. Barth, S. Watelet, C. Troupin, A. Alvera-Azcárate, G. Santinelli, G. Hendriksen, A. Giorgetti, and J.-M. Beckers, October 2016. OceanBrowser: on-line visualization of gridded ocean data and in situ observations. In I. N. di Oceanografia e di Geofisica Sperimentale, editor, *Bollettino di Geofisica teorica ed applicata - IMDIS 2016 International Conference on Marine Data and Information Systems*, volume 57 - supplement, pages 39–40. IOPAN and IMGW. URL <http://www3.ogs.trieste.it/bgta/pdf/IMDIS2016.pdf>.
- [10] 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. URL <http://www.sciencedirect.com/science/article/pii/S0273117716302125>.
- [11] 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. URL <http://www.tandfonline.com/doi/full/10.1080/1755876X.2015.1117764#.V4M5xP7HjGc>.

- [12] L. Petit de la Villéon, S. Pouliquen, H. Wehde, J. Tintore, T. Carval, L. S. Ringheim, S. Tamm, S. Tarot, V. Marinova, M. L. Perivoliotis, de Alfonso Alonso-Muñoyerro, T. Hammarklint, F. Manzano Muñoz, C. Troupin, K. Balem, and C. Guyot, October 2016. Marine environmental data bases: infrastructures and data access systems Copernicus Marine Environment Monitoring Service In Situ TAC: an In situ operational data provision system for operational oceanography. In I. N. di Oceanografia e di Geofisica Sperimentale, editor, *Bollettino di Geofisica teorica ed applicata - IMDIS 2016 International Conference on Marine Data and Information Systems*, volume 57 - supplement, pages 149–150. IOPAN and IMGW. URL <http://www3.ogs.trieste.it/bgta/pdf/IMDIS2016.pdf>.
- [13] 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. URL <http://www.earth-syst-sci-data.net/8/141/2016/>.
- [14] C. Troupin, B. Frontera, J. P. Beltran, A. Kriemeyer, K. Sebastian, S. Gómara, M. Gomila, R. Escudier, M. Juza, B. Mourre, Àngels Garau, T. Cañellas, and J. Tintoré, October 2016. Medclit: the Mediterranean in one click. In I. N. di Oceanografia e di Geofisica Sperimentale, editor, *Bollettino di Geofisica teorica ed applicata - IMDIS 2016 International Conference on Marine Data and Information Systems*, volume 57 - supplement. IOPAN and IMGW. URL <http://www3.ogs.trieste.it/bgta/pdf/IMDIS2016.pdf>.
- [15] C. Troupin, B. J. Pau, B. Frontera, S. Gómara, M. Gomila, A. Kriemeyer, C. Muñoz, M. A. Rújula, I. Serra, and J. Tintoré, October 2016. Data processing and visualization at the Balearic Islands Coastal Observing and Forecasting System (SOCIB). In I. N. di Oceanografia e di Geofisica Sperimentale, editor, *Bollettino di Geofisica teorica ed applicata - IMDIS 2016 International Conference on Marine Data and Information Systems*, volume 57 - supplement, pages 43–44. IOPAN and IMGW. URL <http://www3.ogs.trieste.it/bgta/pdf/IMDIS2016.pdf>.
- [16] M. Juza, B. Mourre, L. Renault, S. Gómara, K. Sebastián, S. Lora, J. Beltran, B. Frontera, C. Troupin, M. Torner, E. Heslop, G. Vizoso, B. Casas, and J. Tintoré, October 28–30 2015. WMOP: Western Mediterranean SOCIB high-resolution ocean forecasting system. In E. Buch, Y. Antoniou, D. Eparkhina, and G. Nolan, editors, *Proceedings of the Seventh EuroGOOS International Conference*, pages 347–355. EuroGOOS, Lisbon, Portugal. URL <http://eurogoos.eu/download/publications/EuroGOOS-2014-Conference-Proceedings.pdf>. ISBN 978-2-9601883-1-8.
- [17] 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. URL <http://www.tandfonline.com/doi/full/10.1080/01490419.2015.1019656>.
- [18] 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. URL <http://onlinelibrary.wiley.com/doi/10.1002/2014JC010514/full>.
- [19] 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. URL <http://www.sciencedirect.com/science/article/pii/S2211122015300207>.
- [20] C. Troupin, J. Beltran, B. Frontera, S. Gómara, S. Lora, D. March, K. Sebastian, and J. Tintoré, October 28–30 2015. Oceanographic data management at the Balearic Islands Coastal Ocean Observing and Forecasting System (SOCIB). In E. Buch, Y. Antoniou, D. Eparkhina, and G. Nolan, editors, *Proceedings of the Seventh EuroGOOS International Conference*, pages 177–184. EuroGOOS, Lisbon, Portugal. URL <http://eurogoos.eu/download/publications/EuroGOOS-2014-Conference-Proceedings.pdf>. ISBN 978-2-9601883-1-8.
- [21] 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. URL <http://www.sciencedirect.com/science/article/pii/S0273117714005754>.
- [22] 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. URL <http://www.geosci-model-dev.net/7/225/2014/gmd-7-225-2014.html>.

- [23] 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>.
- [24] 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>.
- [25] 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>.
- [26] M. Benavides, J. Arístegui, N. S. R. Agawin, X. A. Álvarez Salgado, M. Álvarez, and C. Troupin, 2013. Low contribution of N<sub>2</sub> 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>.
- [27] 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>.
- [28] 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>.
- [29] 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>.
- [30] 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/>.
- [31] 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>.
- [32] 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.
- [33] 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/](http://www.adv-geosci.net/28/29/2010/).
- [34] 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>.
- [35] 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>.
- [36] 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>.
- [37] G. Jordà, L. Houpert, D. Gomis, A. Bosse, P. Testor, J. Llasses, and C. Troupin, in prep. Mapping the temperature and salinity of the Mediterranean Sea (1950-2014). Product description and sources of uncertainty. *Ocean Science*.