

Charles Troupin

Engineer in Physics – Doctor in Oceanography

Contact data

- ✉ **charles.troupin@gmail.com.**
- 📧 **charles.troupin1.**
- 📞 **+32 498 155 998(BE), +34 638 054 012 (ES).**
- 🌐 **www.linkedin.com/in/charlestroupin.**
- 🐙 **<https://github.com/ctroupin/>.**
- 🔑 **<http://orcid.org/0000-0002-0265-1021>.**
- 📄 **https://www.researchgate.net/profile/Charles_Troupin.**
- 🐦 **<https://twitter.com/CharlesTroupin>.**

Experience

2017/01– **Post-doctoral researcher, GeoHydrodynamics and Environment Research ([GHER](#)).**



- ◆ Improvement of the Diva interpolation tool.
- ◆ Development of a user interface for Diva on a Virtual Research Environment.
- ◆ Development of reading/writing tools in Julia.
- ◆ Participation to international project meetings.

2014/03– **Head of Data Centre facility, Balearic Islands Coastal Ocean Observing and Forecasting System ([SOCIB](#)).**



Tasks:

- ◆ Management of the projects and staff of the Data Centre.
- ◆ Relations with external users, data providers and other facilities.
- ◆ Project writing and follow-up.

Data analytics:

- ◆ Development of applications for the access and visualisation of oceanographic data.
- ◆ Forecasting of extreme sea level events (*rissaga*) using time series.
- ◆ Acquisition and processing of new remote-sensing data (wind, salinity sea surface temperature, chlorophyll concentration).
- ◆ Analysis and interpretation of multi-platform observations (HF radar, satellite, stations, mobile platforms).

2013/03– **Post-doctoral researcher, Mediterranean Institute for Advanced Studies ([IMEDEA](#)).**



- ◆ Preparation of high-resolution altimetry products in the Mediterranean Sea (MyOcean 2 project).

Data analytics:

- ◆ Analysis of in situ and remote-sensed data in the Balearic Sea.
- ◆ Processing (interpolation, filtering) and interpretation of multi-sensor measurements (High-frequency radar, underwater glider, altimeter).
- ◆ Operational production of regional altimetry maps (satellite imagery).

2010/10– **Research assistant, [University of Liège](#), Liège.**

2013/02



Tasks:

- ◆ Supervisor of the laboratory "Microscopes" for undergraduate students (laboratory sessions for 60-80 students, evaluation).
- ◆ Presentation of new interpolation techniques in European projects.

Research:

- ◆ Analysis of total-suspended matter images on the North Sea.
- ◆ Spatio-temporal interpolation of satellite wind data.
- ◆ Improvement and testing of DIVA interpolation software tool.

2006/10–**PhD Candidate**, *Fund for Research Training in Industry and Agriculture (National Fund for Scientific Research, Belgium)*, GeoHydrodynamics and Environment Research ([GHER](#)), University of Liège.



Study of the upwelling filament off Cape Ghir (Northwest Africa)

- ♦ Creation of an hydrographic climatology for the North-East Atlantic Ocean.
- ♦ Implementation of the ROMS model at high-resolution around Cape Ghir and design of process-oriented experiments.
- ♦ Participation to the CAIBEX cruise onboard *Sarmiento de Gamboa* (summer 2009) off Cape Ghir and processing of the cruise data.

2010/08–**Trainee**, *NATO Undersea Research Center*, La Spezia (Italy).

2010/09 Task: Development of an operational, multivariate processing of satellite data

- ♦ Pre-processing of remote-sensed data (chlorophyll concentration, sea surface temperature).
- ♦ Empirical orthogonal function analysis.

2005/10–**Research Engineer**, University of Liège.

2005/12 Modeling of the Coccolithophore bloom in the Bay of Biscay using the GOTM model.



Education

PhD in Sciences – Oceanography

2006–2011 **University of Liège and University of Las Palmas de Gran Canaria**, *Title: Study of the Cape Ghir upwelling filament using variational data analysis and regional numerical model*, (<http://hdl.handle.net/2268/105400>).

Advanced Master in Modelling of the Marine Environment

2005–2006 **University of Liège and University of Las Palmas de Gran Canaria**, *Las Palmas de Gran Canaria*, *Grade: Highest Honours*, Final project: *Simulation of annual cycles of phytoplankton, zooplankton and nutrients using a mixed layer model coupled with a biological model*. (<http://hdl.handle.net/2268/112587>)

Civil Engineer in Physics

2000–2005 **University of Liège**, Liège, *Grade: High Honours*, Final project: *Structuring in granular media*. (<http://hdl.handle.net/2268/112588>)

Training

- 2018/01/21 Managing an international research team, ULiège (3h), I. Halleux
- 2016/07 *Big Data: Data Visualisation*, 2 weeks / 2 hours per week, Queensland University of Technology
- 2016/06 *SQL: Table Transformation*, Code Academy
- 2016/06 *Learn SQL*, Code Academy
- 2016/01 *Tropical Mesoscale Convective Systems*, 1.5 hour, Comet MedEd
- 2016/01 *Using Scatterometer Wind and Altimeter Wave Estimates in Marine Forecasting*, 2 hours, Comet MedEd
- 2015/12 *Monitoring Climate from Space*, 5 weeks / 3 hours per week, European Space Agency
- December 2015 *Google's Python Class*, 2 days, Google for Education
- 2012/11/06 *Interview in English*, Gembloux (1 day), J.-P. Hermann
- 2012/10/26 *Understanding the factors of success and failure in the first year of university*, ULg (1/2 day), L. Leduc et B. Mérenne
- 2012/10/24 *Keys and main principles of team management*, ULg (1/2 day), L. Maréchal
- 2012/05/10 *Efficient slides and graphics*, ULg (2h), J.-L. Doumont (Principiæ)
- 2011 *Structuring written documents*, ULg (2h), J.-L. Doumont (Principiæ)

Skills and Competencies

Technical skills

Data analytics	Quality control · Singular events · Filtering · Data mining · Statistics · Predictive modelling
Engineering	Fluid mechanics · Aerodynamics · Finite-Element Method · Atmospheric Physics · Numerical simulations · Numerical analysis · Signal processing · Optimization · High-performance computing
Physical Oceanography	Spatial interpolation · Time-Series Analysis · Principal Component Analysis · Numerical Modelling · Data Processing · Database Management · Satellite Image Processing

IT skills

Programming	Python: numpy, scipy, geopy, pandas, logging, unittest, json, geoip, netCDF4 Julia: data reading/writing (CSV, netCDF), numerical analysis, logging Matlab/Octave: netCDF, easykrig, m_map, ROMS tools Bash scripting: awk, cronjob, wget, ssh, ncftp Web: HTML, CSS, JavaScript, Jekyll, D3, Angular, Markdown, Wordpress, Dokuwiki, Mediawiki Visualisation: bokeh, matplotlib, folium, plotly, leaflet Version control systems: git, SVN Other: Fortran 77, 90, Tcl/Tk, MySQL, PostgreSQL
Operating systems	Linux (Mint, Ubuntu) · Experience with Mac OS X Lion, Microsoft Windows
Image processing	GIMP, Inkscape, Darktable, ImageJ, Matlab, Python, ffmpeg, hugin, ImageMagick, gcolor2
Oceanography software	Ocean Data View, DIVA (spatial interpolation), DINEOF (spatio-temporal interpolation of satellite images)
Other tools	NX Client, VPN, LaTeX (BibTex, Beamer, TikZ), freemind, Asana

Management

Organisation and Communication

Projects and management	Planning and monitoring, scientific and technical report writing, teamwork, adhering to deadlines, writing specification documents, applications for grants and supports.
Communication	Oral presentations at international conferences (in English, Spanish or French), social networking, management of group accounts on twitter (@SOCIB_data, @GHER_ULg).
Conference organisation	Main organiser of several editions of the Diva workshop (10 participants from European research centres on average) and member of the organising committee of the 48th International Liège Colloquium on Ocean Dynamics (200 participants from 40 countries).

Languages

Summary In my current working environment I use Spanish, English and Catalan to communicate with my colleagues and mostly English for the communication with the external users and partners as well as for the writing of technical document.

French	Native speaker.
Spanish	Highly proficient in spoken and written Spanish.
English	Highly proficient in spoken and written English.
Catalan	Limited working proficiency.
German	Limited working proficiency.
Italian	Elementary proficiency.
Dutch	Elementary proficiency (basic course for beginners).

Teaching and Training

General My experience of training at the University is complemented by several training courses given in the frame of European projects or invited lectures.

- 2017/11/15–17 **Open Sea Lab Workshop**, *De Serre, Antwerp*, Coaching the participants for the data access and usage.
- 2017/04 **University of Liège**, *Faculté des Sciences*, "Geophysical Fluid Dynamics" lessons to Master students.
- 2016/01/27–29 **University of Cádiz**, *Facultad de Ciencias del Mar y Ambientales*, Introduction to scientific Python. Application to Oceanography, Graduate students, researchers and professors.
- 2015/12/10–11 **Lisbon, Portugal**, *CMEMS Regional User Training Workshop dedicated to the Atlantic European South West Shelf Ocean*, In Situ Thematic Assembly Center (INSTAC).
- 2015/12/03–04 **La Spezia, Italy**, *CMEMS Regional User and Training Workshop dedicated to the Mediterranean Sea*, In Situ Thematic Assembly Center (INSTAC).
- ◆ Manipulation of netCDF files.
 - ◆ Discovery and access to data.
 - ◆ Use of Python and Ocean Data View to process oceanographic data.
- 2010/10–2013/02 **University of Liège**, *Faculty of Medicine and Faculty of Veterinary Medicine*, Physics laboratory (optics), undergraduate students.
- 2007–2013 **University of Liège**, *Faculty of Sciences*, Physical Oceanography, Risk Management, Marine Meteorology (assistant), undergraduate students.

Projects and services

Summary In the last 10 years I have been involved in several internal, national and European projects dealing with data analysis and management, operational oceanography or numerical modelling. I contributed to the project proposals, the preparation of the deliverables, the support the external users and was participating to the meetings of the technical task group and steering committee.

European projects

- 2017–ongoing **EMODnet Biology**, Creation of gridded field for biological variables.
- 2017–ongoing **EMODnet Chemistry**.
- ◆ Creation of gridded field for chemical variables
 - ◆ Visualisation of the products using the OceanBrowser tool
- 2017–ongoing **EMODnet Data Ingestion**, Development on new gridded products using the data obtained in the frame of the project.
- 2017–ongoing **SeaDataCloud (H2020)**, *Further developing the pan-European infrastructure for marine and ocean data management*.
- ◆ Improvement of the Diva software tool
 - ◆ Development of a user interface for Diva on a Virtual Research Environment
- 2015–2017 **JERICO-NEXT (H2020)**, *Joint European Research Infrastructure Network For Coastal Observatories*, Data management best practices ; glider data processing and calibration.
- 2015–2017 **ODIP 2**, *Ocean Data Interoperability portal*.
- ◆ Test of new standards in data and metadata management
 - ◆ Data visualisation tools
- 2015–2017 **Copernicus Marine Environment Monitoring Service**, *In Situ Thematic Assembly*.
- ◆ Elaboration to the Ocean State Report.
 - ◆ Coordinator for outreach, training and communication activities.
 - ◆ Preparation and participation to the regional user training workshops.
- 2013–2014 **MyOcean 2**, *Ocean monitoring and forecasting infrastructure*.
- ◆ Preparation of high-resolution altimetry products in the Mediterranean Sea.
 - ◆ Data analysis during a multi-platform experiment in the Ibiza Channel.
- 2012–2013 **ODIP**, *Ocean Data Interoperability portal*, Definition of standards.
- 2011–2015 **PERSEUS**, *Policy-oriented marine Environmental Research for the Southern European Seas*, Processing of glider and campaign data.

- 2009–2013 **EMODNET – Chemistry**, *Pilot component for a final operational European Marine Observation and Data Network*.
- ♦ Contribution to the project proposal.
 - ♦ Improvement to the Diva tool.
 - ♦ Development of the Diva web-interface.
- 2009–2013 **SeaDataNet 2**, *Infrastructure for ocean and marine data exchange*, Same tasks as for SeaDataNet.
- 2008–2009 **CAIBEX**, *Study of the Exchanges between continental shelf and ocean in the Canaries-Iberian marine ecosystem*.
- ♦ Implementation of a high-resolution numerical model in the Cape Ghir region.
 - ♦ Participation to the CAIBEX-Cape Ghir cruise (August 2009).
- 2006–2011 **SeaDataNet**, *Infrastructure for ocean and marine data exchange*.
- ♦ Contribution to the project proposal.
 - ♦ Development, documentation and testing of Diva software tool.
 - ♦ Organization of the user workshops.
 - ♦ Participation to the Annual Meetings, Steering Committees and Technical Task Group meetings.

Other projects

- 2014–2017 **BlueFin Tuna**.
- 2014–2017 **Grumers**, *Database for jellyfish observations around the Balearic Islands*.
- 2014–2017 **Medcliv**, *SOCIB data at one click*, Providing access to SOCIB sensors data.
- 2014–2015 **SeaTurtle**, *Development of a viewer showing turtle trajectories in real-time*, Project management.
- 2011–2013 **HiSea**, *High-resolution merged satellite Sea surface temperature fields*, EOF analysis of satellite images improved with numerical model outputs..
- 2010/08 **REP10**, *Recognized Environmental Picture*, Analysis and reconstruction of incomplete satellite images on the Ligurian Sea.

Scientific contributions

- Summary** During my PhD and in the frame of international projects and collaborations, I authored or co-authored several works published in peer-reviewed journal and mainly focused on data analysis and tools. Complete lists are available on request.
- Publications** More than 20 publications on data analysis, numerical modelling and engineering in peer reviewed journals.
- Conferences** More than 100 contributions (talk or poster) to conferences on data management, processing and oceanography.

Articles

A. Iona, A. Theodorou, S. Watelet, C. Troupin, and J.-M. Beckers, Feb 2018. Mediterranean Sea Hydrographic Atlas: towards optimal data analysis by including time-dependent statistical parameters. *Earth System Science Data Discussions*, ():1–29. ISSN 1866-3591. doi:10.5194/essd-2018-9. URL <https://www.earth-syst-sci-data-discuss.net/essd-2018-9/>.

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%2F978-3-319-57645-9_37.

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>.

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). doi:10.3389/fmars.2017.00039. URL <http://journal.frontiersin.org/article/10.3389/fmars.2017.00039/full>.
- 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>.
- 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>.
- 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/>.
- C. Troupin, J. Beltran, E. Heslop, M. Torner, B. Garau, J. Allen, S. Ruiz, and J. Tintoré, 2016. 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>.
- EuroGOOS, 2015. *Oceanographic data management at the Balearic Islands Coastal Ocean Observing and Forecasting System (SOCIB)*.
- G. Jordà, L. Houpert, D. Gomis, A. Bosse, P. Testor, J. Llasses, and C. Troupin, 2015. Mapping the temperature and salinity of the Mediterranean Sea (1950-2014). Product description and sources of uncertainty. *Ocean Science*.
- 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>. In press.
- 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>.
- 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>.
- 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>.
- J.-M. Beckers, A. Barth, C. Troupin, and A. Alvera-Azcárate, February 2014. Some 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. URL <http://journals.ametsoc.org/doi/abs/10.1175/JTECH-D-13-00130.1>.

- 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. URL <http://onlinelibrary.wiley.com/doi/10.1002/2014GL061770/abstract>.
- 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. URL <http://link.springer.com/article/10.1007%2Fs10236-013-0683-4>.
- 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. URL <http://www.sciencedirect.com/science/article/pii/S0967063713001386>.
- 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. URL <http://www.sciencedirect.com/science/article/pii/S1463500311001557>.
- 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. URL <http://www.sciencedirect.com/science/article/pii/S1463500312000790>.
- 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. URL <http://onlinelibrary.wiley.com/doi/10.1111/j.1466-8238.2011.00656.x/pdf>.
- 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. URL <http://www.springerlink.com/content/r5784271357u5400/>.
- 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. URL <http://onlinelibrary.wiley.com/doi/10.1029/2010JC006665/abstract>.
- 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.
- 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. URL www.adv-geosci.net/28/29/2010/.
- 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. URL <http://www.ocean-sci.net/6/595/2010/os-6-595-2010.html>.
- 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. URL <http://onlinelibrary.wiley.com/doi/10.1029/2009JC005512/epdf>.

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. URL <http://www.sciencedirect.com/science/article/B6VF5-4XMKB67-1/2/326bcf54e891969eb6191ec534805d35>.

Book chapters

A. Barth, S. Watelet, C. Troupin, A. Alvera-Azcárate, and J.-M. Beckers, 2017. Analysis of Ocean In Situ Observations and Web-Based Visualization: From Individual Measurements to an Integrated View. In *Oceanographic and Marine CrossDomain Data Management for Sustainable Development*, chapter 15, page 27 pp. IGI Global. doi:10.4018/978-1-5225-0700-0.ch015. URL <http://www.igi-global.com/chapter/analysis-of-ocean-in-situ-observations-and-web-based-visualization/166848>.

Talks and posters

C. Troupin, 5-9 February 2018. Notebooks, reproducibility and other topics in ocean sciences. In *Copernicus Marine Data in Ocean Models and Operational Applications*. EOS COST, EUMETSAT and BSH, Hamburg, Germany.

C. Troupin, A. Barth, S. Watelet, and J.-M. Beckers, 22-25 January 2018. DIVA software and the cloud. In *EUDAT Conference "Putting the EOSC vision into practice"*. EUDAT, Porto, Portugal.

C. Troupin and M. Vinci, 15-17 November 2018. Working with Diva gridded fields. In *Open Sea Lab Bootcamp Hackathon*. EMODnet Secretariat, Antwerp, Belgium. URL <http://hdl.handle.net/2268/219960>.

A. Barth, C. Troupin, S. Watelet, A. Alvera Azcárate, G. Santinelli, G. Hendriksen, and J.-M. Beckers, 5 April 2017. OceanBrowser. In *EMODnet Chemistry 3 Technical Working Group*. OGS, Venice, Italy. Oral.

A. Barth, C. Troupin, S. Watelet, and J.-M. Beckers, 17 October 2017. New DIVA capabilities for climatologies. In *SeaDataCloud Product meeting*. HCMR, Athens, Greece. URL <http://hdl.handle.net/2268/215269>.

A. Barth, C. Troupin, S. Watelet, and J.-M. Beckers, 18-19 October 2017. Progress with analysis of DIVA as cloud service. In *SeaDataCloud Side Technical Meeting*. HCMR, Athens, Greece. URL <http://hdl.handle.net/2268/215272>.

A. Barth, C. Troupin, S. Watelet, and J.-M. Beckers, 18-19 October 2017. Status of Diva online as VRE application. In *SeaDataCloud 1st Plenary meeting*. HCMR, Athens, Greece. URL <http://hdl.handle.net/2268/215273>.

M. Licer, B. Mourre, C. Troupin, A. Kriemeyer, and J. Tintoré, 23-28 April 2017. Numerical Study of Balearic Meteotsunami Generation and Propagation under Synthetic Gravity Wave Forcing. In *European Geosciences Union General Assembly*. European Geosciences Union, Vienna, Austria. URL <http://meetingorganizer.copernicus.org/EGU2015/EGU2015-875-1.pdf>. Poster.

C. Troupin, A. Barth, C. M. noz, S. Watelet, and J.-M. Beckers, 2-5 October 2017. Notebooks for documenting work-flows. In *4th ODIP II Workshop*. Marine Institute, Galway, Ireland. URL <http://hdl.handle.net/2268/214918>.

C. Troupin, C. M. noz, M. Rújula, J. Fernández, S. W. A. Barth, and J.-M. Beckers, 2-5 October 2017. Software citation and process traceability. In *4th ODIP II Workshop*. Marine Institute, Galway, Ireland. URL <http://hdl.handle.net/2268/214973>.

C. Troupin, G. Santinelli, G. Hendriksen, and A. Barth, 17 May 2017. Improving the performance of visualization services. In *EMODnet Chemistry 3 Kickoff meeting*. OGS, Trieste, Italy. Oral.

C. Troupin, S. Watelet, A. Barth, and J.-M. Beckers, 2-5 October 2017. Experiences with using netCDF 4. In *4th ODIP II Workshop*. Marine Institute, Galway, Ireland. URL <http://hdl.handle.net/2268/214917>.

- A. Barth, S. Watelet, A. A.-A. C. Troupin, G. Santinelli, G. Hendriksen, A. Giorgetti, and J.-M. Beckers, 11 October 2016. OceanBrowser: on-line visualization of gridded ocean data and in situ observations. In *International Conference on Marine Data and Information Systems (IMDIS)*. Gdansk, Poland. Oral.
- A. Barth, S. Watelet, C. Troupin, A. A. Azcarate, G. Santinelli, G. Hendriksen, A. Giorgetti, and J.-M. Beckers, 17-22 April 2016. Analysis of ocean in situ observations and web-based visualization. In *13th European Geosciences Union General Assembly*. European Geosciences Union, Vienna, Austria. Presentation or poster.
- J. Marmain, E. Heslop, A. Lana, V. Fernández, B. Mourre, M. Juza, C. Troupin, A. Orfila, and J. Tintoré, 21-26 February 2016. SOCIB HF radar : a key contribution to multi-platform ocean observation. In *Ocean Sciences Meeting*. AGU, ASLO, and TOS, New Orleans (LA) U.S.A. Poster.
- B. Mourre, M. Licer, C. Troupin, A. Kriemeyer, and J. Tintoré, 6 October 2016. Balearic Rissaga Forecasting System: studying meteotsunami propagation under synthetic gravity wave forcing and revisiting the 2006 event. In *XXXII Trobades Científiques de la Mediterrània - Josep Miquel Vidal - Planeta Océano*. Maó, Spain. Oral.
- L. Petit de La Villeon, S. Pouliquen, H. Wehde, J. Tintoré, T. Carval, L. S. Ringheim, S. Tamm, L. P. Stephane Tarot, V. Marinova, M. A.-M. noyerro, T. Hammarklint, F. Manzano Muñoz, C. Troupin, K. Balem, and C. Guyot, 12 October 2016. Copernicus Marine Environment Monitoring Service In Situ TAC: an operational data provision system for operational oceanography. In *International Conference on Marine Data and Information Systems (IMDIS)*. Gdansk, Poland. Oral.
- S. Ruiz, M. Claret, A. Pascual, A. Olita, A. Mahadevan, A. Tovar, C. Troupin, J. Tintoré, and A. Capet, 21-26 February 2016. Observational and numerical evidence for ocean frontogenesis inducing submesoscale processes and impacting biochemistry. In *Ocean Sciences Meeting*. AGU, ASLO, and TOS, New Orleans (LA) U.S.A. Poster.
- I. Serra, C. Troupin, and J. Tintoré, 18-20 May 2016. Indicators and monitoring tool: the INSTAC Dashboard. In *2nd CMEMS INSTAC Plenary Meeting*. BSH, Hamburg, Germany.
- C. Troupin, J. P. Beltran, B. Frontera, S. Gómara, M. Gomila, A. Kriemeyer, C. Muñoz, M. A. Rújula, I. Serra, and J. Tintoré, 11 October 2016. Data processing and visualization at the Balearic Islands Coastal Observing and Forecasting System (SOCIB). In *International Conference on Marine Data and Information Systems (IMDIS)*. Gdansk, Poland. Oral.
- C. Troupin, J. P. Beltran, A. Kriemeyer, E. Heslop, S. Ruiz, and F. Cyr, 26-29 September 2016. Socib glider toolbox: from sensor to data repository. In *7th EGO conference on autonomous ocean gliders and their applications*. UK National Oceanography Centre, Southampton, United Kingdom. Poster.
- C. Troupin, A. Chalkiopoulos, and F. Manzano, 18-20 May 2016. Communication & training activities. In *2nd CMEMS INSTAC Plenary Meeting*. BSH, Hamburg, Germany.
- C. Troupin, B. Frontera, J. P. Beltran, A. Kriemeyer, K. Sebastián, S. Gómara, M. Gomila, R. Escudier, M. Juza, B. Mourre, A. Garau, T. Cañellas, and J. Tintoré, 11 October 2016. Medcllic: the Mediterranean in one click. In *International Conference on Marine Data and Information Systems (IMDIS)*. Gdansk, Poland. Poster.
- C. Troupin, B. Frontera, K. Sebastián, J. P. Beltran, A. Kriemeyer, S. Gómara, M. Gomila, R. Escudier, M. Juza, B. Mourre, A. Garau, T. Cañellas, and J. Tintoré, 17-22 April 2016. Medcllic: the mediterranean in one click. In *13th European Geosciences Union General Assembly*. European Geosciences Union, Vienna, Austria. Poster.
- C. Troupin, P. Rotllan, I. Serra, and B. Frontera, 26-27 October 2016. Dashboard, Communication and Training activities. In *3rd CMEMS INSTAC Plenary Meeting*. ACRI, Sophia-Antipolis, France.

- C. Troupin, I. Serra, and J. Tintoré, 18-20 May 2016. Preparation for the future CMEMS Training Activities. In *2nd CMEMS INSTAC Plenary Meeting*. BSH, Hamburg, Germany.
- A. Barth, S. Watelet, C. Troupin, and J.-M. Beckers, 16-17 September 2015. Diva and ocean-browser. In *SeaDataNet 2 Final Meeting*. Ifremer, Brest, France. URL http://www.seadatanet.org/content/download/26353/180036/file/SDN2_WP8_WP9_DIVA_Oceanbrowser_Barth.pdf. Presentation.
- A. Barth, S. Watelet, C. Troupin, and J.-M. Beckers, 12-17 April 2015. Web-based visualization of gridded dataset usings OceanBrowser. In *12th European Geosciences Union General Assembly*. European Geosciences Union, Vienna, Austria. URL <http://meetingorganizer.copernicus.org/EGU2015/EGU2015-5792.pdf>. Presentation.
- J. P. Beltran, E. Heslop, S. Ruiz, C. Troupin, and J. Tintoré, 12-17 April 2015. SOCIB Glider toolbox: from sensor to data repository. In *European Geosciences Union General Assembly*. European Geosciences Union, Vienna, Austria. URL <http://meetingorganizer.copernicus.org/EGU2015/EGU2015-11719.pdf>. Poster.
- J. P. Beltran, E. Heslop, S. Ruiz, C. Troupin, and J. Tintoré, 4-8 May 2015. SOCIB Glider toolbox: from sensor to data repository. In *47th International Liège Colloquium on Ocean Dynamics*. GHER, Liège, Belgium. Poster.
- A. Capet, E. Mason, V. Rossi, C. Troupin, Y. Faugère, I. Pujol, and A. Pascual, 12-17 April 2015. Eddy-Driven Offshore Transport in the Eastern Boundary Upwelling Systems: Implications of Refined Altimetry. In *European Geosciences Union General Assembly*. European Geosciences Union, Vienna, Austria. URL <http://meetingorganizer.copernicus.org/EGU2015/EGU2015-15282.pdf>. Poster.
- A. Lana, V. Fernández, A. Orfila, C. Troupin, and J. Tintoré, 12-17 April 2015. Validation of HF Radar ocean surface currents in the Ibiza Channel using lagrangian drifters, moored current meter and underwater gliders. In *European Geosciences Union General Assembly*. European Geosciences Union, Vienna, Austria. URL <http://meetingorganizer.copernicus.org/EGU2015/EGU2015-2780-1.pdf>. Poster.
- S. Lora, K. Sebastián, C. Troupin, J. P. Beltran, B. Frontera, S. Gómara, and J. Tintoré, 12-17 April 2015. Oceanographic data at your fingertips: the SOCIB App for smartphones. In *European Geosciences Union General Assembly*. European Geosciences Union, Vienna, Austria. URL <http://meetingorganizer.copernicus.org/EGU2015/EGU2015-2823.pdf>. Poster.
- S. Lora, K. Sebastián, C. Troupin, J. P. Beltran, B. Frontera, S. Gómara, and J. Tintoré, 4-8 May 2015. Oceanographic data at your fingertips: the SOCIB App for smartphones. In *47th International Liège Colloquium on Ocean Dynamics*. GHER, Liège, Belgium. URL <http://meetingorganizer.copernicus.org/EGU2015/EGU2015-2823.pdf>. Poster.
- A. Pascual, A. Lana, C. Troupin, S. Ruiz, Y. Faugère, R. Escudier, and J. Tintoré, 4-8 May 2015. Assessing SARAL/AltiKa data in the coastal zone with HF radar observations. In *47th International Liège Colloquium on Ocean Dynamics*. GHER, Liège, Belgium. URL <http://meetingorganizer.copernicus.org/EGU2015/EGU2015-11719.pdf>. Poster.
- A. Pascual, A. Lana, C. Troupin, S. Ruiz, Y. Faugère, R. Escudier, and J. Tintoré, 12-17 April 2015. Assessing SARAL/AltiKa delayed-time Ssalto/Duacs data in the coastal zone: comparisons with HF radar observations in the Ibiza Channel. In *European Geosciences Union General Assembly*. European Geosciences Union, Vienna, Austria. URL <http://meetingorganizer.copernicus.org/EGU2015/EGU2015-11164.pdf>. Poster.
- L. Prieto, B. Frontera, G. Vizoso, J. M. Aguiló, J. P. Pujol, C. Troupin, A. Grau, J. Ruiz, and J. Tintoré, 2-3 March 2015. A new website platform for uploading data from a systematic jellyfish monitoring system in the Balearic Islands: a joint science society approach. In *PERSEUS International Workshop on Jellyfish*. CSIC, IOC-UNESCO, CEIMAR, Cadiz Spain.

- S. Ruiz, A. Pascual, J. Allen, A. Olita, A. Tovar, A. Mahadevan, M. Claret, C. Troupin, P. Poulain, T. Oguz, and J. Tintoré, 4-8 May 2015. Assessing SARAL/AltiKa data in the coastal zone with HF radar observations. In *47th International Liège Colloquium on Ocean Dynamics*. GHER, Liège, Belgium. URL <http://meetingorganizer.copernicus.org/EGU2015/EGU2015-11719.pdf>. Poster.
- J. Tintoré, E. Heslop, B. Mourre, M. Juza, C. Troupin, B. Casas, M. Torner, A. Lana, V. Fernández, J. Marmain, A. Pascual, A. Orfila, S. Ruiz, T. Oguz, A. Massanet, E. Alou, D. Álvarez, R. Escudier, D. March, L. Gómez-Pujol, A. Álvarez Ellacuria, S. Gómara, K. Sebastián, S. Lora, J. P. Beltran, B. Frontera, C. Castilla, P. Balaguer, D. Roque, I. Lizarán, T. Cañellas, A. Garau, R. Rodriguez, M. Gomila, D. Conti, E. Capo, J. M. Sayol, E. Mason, and J. Allen, 4 May 2015. Paradigm change in ocean studies: multi-platform observing and forecasting integrated approach in response to science and society. In *47th International Liège Colloquium on Ocean Dynamics*. GHER, Liège, Belgium. Presentation (keynote).
- C. Troupin, 3 December 2015. Coastal observatories and integrated coastal zone management systems. In *CMEMS Regional User and Training Workshop dedicated to the Mediterranean Sea (RUTW/MED)*. Copernicus Marine Environment Monitoring Service, La Spezia, Italy.
- C. Troupin, 27 May 2015. Towards a Roadmap for Blue Investment and Jobs in the Mediterranean. In *Union for the Mediterranean Stakeholder Conference*. Union for the Mediterranean, Athens, Greece.
- C. Troupin, J. P. Beltran, B. Frontera, S. Gómara, S. Lora, D. March, K. Sebastián, and J. Tintoré, 4-8 May 2015. Data management and applications at SOCIB data centre. In *47th International Liège Colloquium on Ocean Dynamics*. GHER, Liège, Belgium. Presentation and poster.
- C. Troupin, J. P. Beltran, B. Frontera, S. Gómara, S. Lora, D. March, K. Sebastián, and J. Tintoré, 12-17 April 2015. SOCIB applications for oceanographic data management. In *European Geosciences Union General Assembly*. European Geosciences Union, Vienna, Austria. URL <http://meetingorganizer.copernicus.org/EGU2015/EGU2015-875-1.pdf>. Presentation.
- C. Troupin and A. Chalkiopoulos, 4 December 2015. In Situ TAC training. In *CMEMS Regional User and Training Workshop dedicated to the Mediterranean Sea (RUTW/MED)*. Copernicus Marine Environment Monitoring Service, La Spezia, Italy.
- C. Troupin, J. Tintoré, and SOCIB Team, 23-24 September 2015. Task 4.4 : Communication. In *1st CMEMS INSTAC Plenary Meeting*. EuroGOOS, Bruxelles, Belgium.
- C. Troupin, J. Tintoré, and SOCIB Team, 23-24 September 2015. Task 4.5 : Training. In *1st CMEMS INSTAC Plenary Meeting*. EuroGOOS, Bruxelles, Belgium.
- A. Capet, E. Mason, C. Troupin, Y. Faugère, I. Pujol, and A. Pascual, 22-24 September 2014. Enhanced Measurements of Mesoscale Activity in the Eastern Boundary Upwelling Systems. In *MyOcean Science Days*. MyOcean and Météo France, Toulouse, France. URL <http://www.myocean.eu/web/16-news-events.php?item=1669>. Presentation.
- G. Jordà, L. Houpert, D. Gomis, A. Bosse, P. Testor, J. Llasses, and C. Troupin, 11-13 November 2014. A new hydrographic gridded product for the Mediterranean Sea. Impact of XBT correction on heat content estimates. In *4th XBT workshop on "XBT Science and the Way Forward"*. Beijing, China. URL <http://2014xbtworkshop.csp.escience.cn/dct/page/1>.
- A. Lana, V. Fernández, C. Troupin, A. Pascual, A. Orfila, and J. Tintoré, 30 April 2014. Surface current patterns in the Ibiza Channel with the use of High Frequency (HF) Radar system. In *11th European Geosciences Union General Assembly*. European Geosciences Union, Vienna, Austria. URL <http://meetingorganizer.copernicus.org/EGU2014/EGU2014-12293.pdf>. Poster.
- A. Pascual, B. Casas, J. T. Allen, M. Torner, A. Olita, S. Ruiz, C. Troupin, E. Mason, M. Palmer, F. Margirier, C. Castilla, P. Balaguer, I. Lizarán, G. Notarstefano, A. Massanet, K. Sebastián, J. P. Beltran, M. Juza, A. Tovar, P. Vélez, T. Oguz, A. Mahadevan, P. Poulain, and J. Tintoré, 1-4

- December 2014. ALBOREX: a major intensive multi-platform and multidisciplinary experiment in the Alboran Sea. In *3rd PERSEUS General Assembly & Scientific Workshop*. Marrakesh, Morocco. Presentation.
- A. Pascual, A. Lana, C. Troupin, S. Ruiz, Y. Faugère, R. Escudier, and J. Tintoré, 27 October 2014. Assessing SARAL/AltiKa near-real time data in the coastal zone: comparisons with HF radar. In *SARAL/AltiKa Workshop*. EUMETSAT and CNES, Lake Constance, Germany. URL <http://www.ostst-altimetry-2014.com/authors/saralaltika/>. Poster.
- C. Troupin, A. Barth, J.-M. Beckers, and A. Pascual, 2 May 2014. New developments in spatial interpolation methods of Sea-Level Anomalies in the Mediterranean Sea. In *11th European Geosciences Union General Assembly*. European Geosciences Union, Vienna, Austria. URL <http://meetingorganizer.copernicus.org/EGU2014/EGU2014-11423.pdf>. Poster.
- C. Troupin, J. Beltran, B. Frontera, S. Gómara, S. Lora, D. March, K. Sebastián, and J. Tintoré, 28-30 October 2014. Oceanographic Data management at SOCIB. In *7th EuroGOOS Conference: HF Radar Meeting*. EuroGOOS and Hidrográfico Portugal, Lisboa, Portugal. URL <http://eurogoos2014.hidrografico.pt/>. Presentation.
- C. Troupin, J. P. Beltran, B. Frontera, S. Gómara, S. Lora, D. March, K. Sebastián, and J. Tintoré, 11-13 June 2014. Oceanographic Data Management at SOCIB. In *III Encuentro de la Oceanografía Física Española*. ULPGC, Las Palmas de Gran Canaria, Spain. URL <http://ivcongresoccm.ulpgc.es/>. Presentation.
- C. Troupin, A. Capet, A. Barth, J.-M. Beckers, and A. Pascual, 22-24 September 2014. Interpolating of Sea-Level Anomaly in the Mediterranean and the Black Sea using the Data-Interpolating Variational Analysis. In *MyOcean Science Days*. MyOcean and Météo France, Toulouse, France. URL <http://www.myocean.eu/web/16-news-events.php?item=1669>. Poster.
- C. Troupin, E. Heslop, and J. Tintoré, 24 November 2014. Multi-platform observing and forecasting systems. New eyes to understand ocean state and variability: "the quiet revolution". In *Ocean Seminar*. Barcelona, Spain.
- C. Troupin, A. Lana, V. Fernández, J. Beltran, B. Frontera, S. Gómara, S. Lora, K. Sebastián, and J. Tintoré, 28-30 October 2014. SOCIB HF Radar system: Applications and validation. In *7th EuroGOOS Conference*. EuroGOOS and Hidrográfico Portugal, Lisboa, Portugal. URL <http://eurogoos2014.hidrografico.pt/>. Presentation.
- C. Troupin, A. Pascual, A. Lana, G. Valladeau, I. Pujol, and J. Tintoré, 12 June 2014. Combined use of glider, radar and altimetry data to study a coastal current in the Western Mediterranean Sea. In *III Encuentro de la Oceanografía Física Española*. ULPGC, Las Palmas de Gran Canaria, Spain. URL <http://ivcongresoccm.ulpgc.es/>. Poster.
- C. Troupin, A. Pascual, G. Valladeau, A. Lana, E. Heslop, S. Ruiz, M. Torner, N. Picot, and J. Tintoré, 17 June 2014. Use of SARAL/AltiKa data in a multi-sensor approach: Application to the study of a coastal current in the Balearic Sea. In *6th EGO Meeting*. Kiel, Germany. Poster.
- C. Troupin, A. Pascual, G. Valladeau, A. Lana, I. Pujol, E. Heslop, M. Torner, N. Picot, and J. Tintoré, 30 April 2014. Combined use of glider, radar and altimetry data to study a coastal current in the western Mediterranean Sea. In *11th European Geosciences Union General Assembly*. European Geosciences Union, Vienna, Austria. URL <http://meetingorganizer.copernicus.org/EGU2014/EGU2014-3762.pdf>. Presentation.
- G. Vizoso, C. Troupin, J. Tintoré, and L. Prieto, 1-4 December 2014. GRUMERS: Web-site platform to upload jellyfish observations by workers involved in coastal services in the Balearic Sea. In *3rd PERSEUS General Assembly & Scientific Workshop*. Marrakesh, Morocco. Presentation.
- S. Watelet, A. Barth, C. Troupin, M. Ouberdous, and J.-M. Beckers, 29 April 2014. Data-Interpolating Variational Analysis (DIVA) software : recent development and application. In *11th*

European Geosciences Union General Assembly. European Geosciences Union, Vienna, Austria. URL <http://meetingorganizer.copernicus.org/EGU2014/EGU2014-8555.pdf>. Poster.

S. Watelet, J.-M. Beckers, A. Barth, M. Ouberdous, and C. Troupin, 28 April 2014. Reconstruction of the Gulf Stream since 1900 and correlation with the North Atlantic Oscillation. In *11th European Geosciences Union General Assembly*. European Geosciences Union, Vienna, Austria. URL <http://meetingorganizer.copernicus.org/EGU2014/EGU2014-8469.pdf>. Presentation.

A. Barth, C. Troupin, A. Alvera-Azcárate, and J.-M. Beckers, 25 September 2013. Variational data analysis for generating ocean climatologies (Diva) and web-based distribution of data products (OceanBrowser). In *International Conference on Marine Data and Information Systems (IMDIS)*. Lucca, Italy. Presentation.

R. Escudier, J. Bouffard, C. Troupin, and A. Pascual, 12 June 2013. Two steps mapping for HR maps including bathymetry constraints. In *TAPAS Workshop*. Toulouse, France. Presentation.

A. Pascual, R. Escudier, and C. Troupin, 8-11 October 2013. Innovative Approaches for Altimetry Mapping in the Coastal Band. Applications to the North-western Mediterranean Sea. In *Ocean Surface Topography Science Team Meeting*. Boulder (CO), U.S.A. Presentation.

C. Troupin, A. Barth, J.-M. Beckers, and A. Pascual, 25 September 2013. An innovative and efficient method for interpolation of sea-level anomaly: the Data-Interpolating Variational Analysis (Diva). Application to the Mediterranean Sea. In *International Conference on Marine Data and Information Systems (IMDIS)*. Lucca, Italy. Poster.

C. Troupin, A. Barth, J.-M. Beckers, and A. Pascual, 7-8 October 2013. Spatial interpolation of SLA along-track measurements using Diva: Application to the coastal area of the NW Mediterranean Sea. In *7th Coastal Altimetry Workshop*. Boulder (CO), U.S.A. Poster.

C. Troupin, A. Barth, M. Ouberdous, A. Alvera-Azcárate, and J.-M. Beckers, 26-27 September 2013. WP8 and WP9 developments: Data-Interpolating Variational Analysis (Diva) developments. In *SeaDataNet 2 2nd Plenary Meeting*. Lucca, Italy. Presentation.

C. Troupin, A. Lana, M.-I. Pujol, and A. Pascual, 8-11 October 2013. Interpolation of SLA using Diva: Near-real time application during a multi-sensor experiment in the Ibiza Channel. In *Ocean Surface Topography Science Team Meeting*. Boulder (CO), U.S.A. Poster.

C. Troupin, M. Ouberdous, A. Barth, and J.-M. Beckers, 30 April 2013. Development of the Diva tool for the interpolation of oceanic data. In *10th European Geosciences Union General Assembly*. European Geosciences Union, Vienna, Austria. URL <http://meetingorganizer.copernicus.org/EGU2013/EGU2013-6300.pdf>. Poster.

A. Alvera-Azcárate, C. Troupin, A. Barth, and J.-M. Beckers, 10 May 2012. An EOF-based technique to compute merged high resolution sea surface temperature fields. In *44th International Liège Colloquium on Ocean Dynamics*. Liège, Belgium.

G. Lepoint, N. Marichal, C. Troupin, and D. Monti, 2012. Stable isotope composition spatial variability at the microhabitat the scale of macrofauna inhabiting a tropical freshwater stream (Pérou River, Guadeloupe). In *ISOECOL 2012 (Application of stable isotopes in Ecology)*. Brest, France. URL <http://hdl.handle.net/2268/131579>. Poster.

M. Ouberdous, C. Troupin, A. Barth, A. Alvera-Azcárate, and J.-M. Beckers, 24 April 2012. Data-Interpolating Variational Analysis (Diva) software, a tool for European regional seas and Ocean climatologies production. In *9th European Geosciences Union General Assembly*. European Geosciences Union, Vienna, Austria. URL <http://hdl.handle.net/2268/126585>. Poster.

C. Troupin, A. Alvera Azcárate, A. Barth, and J.-M. Beckers, 16 November 2012. How to remove clouds in a time series of SST images? Application to the Canary Island - Madeira Region.

- In *II Encuentro de la Oceanografía Física Española*. Puertos del Estado, Madrid, Spain. URL <http://hdl.handle.net/2268/134309>. Presentation.
- C. Troupin, A. A. Azcárate, and J.-M. Beckers, 24 April 2012. Reconstruction and analysis of QuikSCAT wind measurements with an EOF-based technique. In *9th European Geosciences Union General Assembly*. European Geosciences Union, Vienna, Austria. URL <http://hdl.handle.net/2268/126585>. Poster.
- C. Troupin, A. Barth, A. Alvera-Azcárate, D. Sirjacobs, and J.-M. Beckers, 24 February 2012. Viewing through the clouds in satellite images. In *VLIZ Young Marine Scientists' Day*. Vlaams Instituut voor de Zee, Brugge, Belgium. URL <http://hdl.handle.net/2268/113058>. Poster.
- C. Troupin and F. Machín, 27 April 2012. Negative wind anomalies generated a diminution of productivity in the North Atlantic in 2010. In *9th European Geosciences Union General Assembly*. European Geosciences Union, Vienna, Austria. URL <http://hdl.handle.net/2268/123991>. Poster.
- C. Troupin and F. Machín, 14 November 2012. Negative wind anomalies generated a diminution of productivity of in the North Atlantic in 2010. In *II Encuentro de la Oceanografía Física Española*. Puertos del Estado, Madrid, Spain. URL <http://hdl.handle.net/2268/134288>. Poster.
- C. Troupin, M. Ouberdous, A. Barth, A. Alvera-Azcárate, D. Sirjacobs, and J.-M. Beckers, 24 April 2012. Comparison between Optimal Interpolation (OI) and Data-Interpolating Variational Analysis (Diva) for the generation of analysis and error gridded fields. In *9th European Geosciences Union General Assembly*. European Geosciences Union, Vienna, Austria. URL <http://hdl.handle.net/2268/126586>. Poster.
- C. Troupin, M. Ouberdous, A. Barth, A. Alvera Azcárate, D. Sirjacobs, and J.-M. Beckers, 15 November 2012. Generation of analysis and consistent error fields using the Data Interpolating Variational Analysis (Diva). In *II Encuentro de la Oceanografía Física Española*. Puertos del Estado, Madrid, Spain. URL <http://hdl.handle.net/2268/134309>. Poster.
- C. Troupin, P. Sangrà, J. Arístegui, B. Barreiro González, and D. Barton, 15 November 2012. Upwelling, filament and eddies in the Canary Current upwelling system during the CAIBEX cruise (Summer 2009). In *II Encuentro de la Oceanografía Física Española*. Puertos del Estado, Madrid, Spain. URL <http://hdl.handle.net/2268/134295>. Poster.
- C. Troupin, P. Sangrà, J. Arístegui, J.-M. Beckers, and E. D. Barton, 2 May 2012. High-resolution measurements of an upwelling filament during the CAIBEX survey. In *43rd International Liège Colloquium on Ocean Dynamics*. GHER, Liège, Belgium. URL <http://hdl.handle.net/2268/112589>. Poster.
- A. Barth, A. Alvera-Azcárate, C. Troupin, M. Ouberdous, and J.-M. Beckers, 25 November 2011. Data assimilation at ULg. In *Sangoma Kick-Off meeting*. Liège, Belgium.
- C. Troupin, A. Alvera-Azcárate, A. Barth, and J.-M. Beckers, 5 April 2011. EOF analysis of Sea Surface Temperature in the Canary Island - Madeira region. In *8th European Geosciences Union General Assembly*. European Geosciences Union, Vienna, Austria. URL <http://hdl.handle.net/2268/89787>. Presentation.
- C. Troupin and F. Machín, April 2011. Evidence of wind-induced temperature anomalies in the tropical and subtropical North Atlantic Ocean in winter-spring 2010. In *8th European Geosciences Union General Assembly*. European Geosciences Union, Vienna, Austria. URL <http://hdl.handle.net/2268/89790>. Poster.
- C. Troupin, M. Ouberdous, A. Barth, J.-M. Beckers, and the SeaDataNet-Diva team, 7 April 2011. Overview and progresses of the SeaDataNet regional climatologies. In *8th European Geosciences Union General Assembly*. European Geosciences Union, Vienna, Austria. URL <http://hdl.handle.net/2268/89813>. Poster.

- C. Troupin, P. Sangrà, and J. Arístegui, 29 November 2011. Mesoscale experiments and modelling - Cape Ghir. In *CAIBEX workshop*. Vigo, Spain. URL <http://hdl.handle.net/2268/113007>. Presentation.
- C. Troupin, D. Sirjacobs, M. Rixen, P. Brasseur, J.-M. Brankart, A. Alvera-Azcárate, A. Barth, A. Capet, M. Ouberdous, F. Lenartz, M.-E. Toussaint, and J.-M. Beckers, 7 April 2011. Advanced Data Interpolating Variational Analysis. Application to climatological data. In *8th European Geosciences Union General Assembly*. European Geosciences Union, Vienna, Austria. URL <http://hdl.handle.net/2268/89795>. Poster.
- 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, 21 March 2011. Advanced Data Interpolating Variational Analysis. Application to climatological data. In *IODE 50th Anniversary International Conference*. Liège, Belgium. URL <http://hdl.handle.net/2268/125254>. Poster.
- A. Alvera-Azcárate, A. Barth, C. Troupin, and J.-M. Beckers, May 6 2010. Comparison between in situ and satellite surface temperature in the Western Mediterranean Sea. In *7th European Geosciences Union General Assembly*. European Geosciences Union, Vienna, Austria. URL <http://hdl.handle.net/2268/91805>. Presentation.
- A. Alvera-Azcárate, A. Barth, C. Troupin, and J.-M. Beckers, 30 April 2010. Error assessment of sea surface temperature satellite data relative to in situ data: effect of spatial and temporal coverage. In *42nd International Liège Colloquium on Ocean Dynamics*. GHER, Liège, Belgium. URL <http://hdl.handle.net/2268/91802>. Presentation.
- A. Barth, A. Alvera-Azcárate, D. Sirjacobs, C. Troupin, M. Ouberdous, and J.-M. Beckers, March 2010. A web interface for gridding and visualizing oceanographic data sets. In *International Conference on Marine Data and Information Systems (IMDIS)*. Paris, France. URL <http://hdl.handle.net/2268/91863>. Presentation.
- J.-M. Beckers, A. Alvera-Azcárate, A. Barth, and C. Troupin, 22 February 2010. Climatological analysis of irregularly distributed data using Data Interpolating Variational Analysis Diva. In *Ocean Science Meeting*. American Geophysical Union, Portland, U.S.A. URL <http://hdl.handle.net/2268/113145>. Poster.
- J.-M. Beckers, A. Alvera-Azcárate, A. Barth, L. Vandenbulcke, C. Troupin, D. Sirjacobs, and M. Ouberdous, 1 April 2010. Synthesis of regional product activities JRA4-JRA9. In *SeaDataNet 4th Plenary Meeting*. Paris, France. URL <http://hdl.handle.net/2268/113105>. Presentation.
- P. Sangrà, J. Arístegui, C. Troupin, and E. D. Barton, 25 February 2010. Poleward front of upwelling filaments generates subsurface anticyclonic eddies (FEDDY): a CAIBEX Project contribution. In *Ocean Science Meeting*. American Geophysical Union, Portland (OR), U.S.A. URL <http://hdl.handle.net/2268/125226>. Poster.
- C. Troupin, J.-M. Beckers, P. Sangrà, A. Alvera-Azcárate, A. Barth, F. Machín, E. Mason, F. Lenartz, M. Ouberdous, and D. Sirjacobs, 26 April 2010. High-resolution measurements and modelling of the Cape Ghir upwelling filament during the CAIBEX cruise. In *42nd International Liège Colloquium on Ocean Dynamics*. GHER, Liège, Belgium. URL <http://hdl.handle.net/2268/113132>. Presentation and poster.
- C. Troupin, M. Ouberdous, A. Barth, M. Bassompierre, C. Coatanoan, A. Grandi, S. Lind Johansen, O. Ostensen, H. Sagen, S. Scory, M. Tonani, M.-E. Toussaint, C. Tronconi, and J.-M. Beckers, 29 March 2010. SeaDataNet regional climatologies: an overview. In *International Conference on Marine Data and Information Systems (IMDIS)*. Paris, France. URL <http://hdl.handle.net/2268/113108>. Poster.

- C. Troupin, M. Ouberdous, and J.-M. Beckers, 29 March 2010. Godiva: a 4-dimension implementation of Diva. In *International Conference on Marine Data and Information Systems (IMDIS)*. Paris, France. URL <http://hdl.handle.net/2268/113111>. Poster.
- C. Troupin, P. Sangrà, J. Arístegui, J.-M. Beckers, and E. D. Barton, 22 February 2010. Modeling and observation of an upwelling filament off Cape Ghir (NW Africa) during the CAIBEX survey. In *Ocean Science Meeting*. American Geophysical Union, Portland (OR), U.S.A. URL <http://hdl.handle.net/2268/113144>. Poster.
- A. Barth, A. Alvera-Azcárate, C. Troupin, M. Ouberdous, and J.-M. Beckers, 19-24 April 2009. A web interface for gridding arbitrarily distributed in situ data based on Data-Interpolating Variational Analysis (Diva). In *6th European Geosciences Union General Assembly*. Vienna, Austria. URL <http://hdl.handle.net/2268/33456>. Presentation.
- J.-M. Beckers, A. Alvera-Azcárate, A. Barth, C. Troupin, D. Sirjacobs, and M. Ouberdous, 23 October 2009. Diva: new features. In *4th SeaDataNet Diva workshop*. Calvi, France. URL <http://hdl.handle.net/2268/113148>. Presentation.
- S. Scory, M. Ouberdous, C. Troupin, and J.-M. Beckers, 19 April 2009. S,T-climatologies of the North Sea using the Variational Inverse Method. In *6th European Geosciences Union General Assembly*. European Geosciences Union, Vienna, Austria. URL <http://hdl.handle.net/2268/113248>. Poster.
- D. Sirjacobs, F. Lenartz, C. Troupin, A. Alvera-Azcárate, A. Barth, M. Ouberdous, L. Vandembulcke, and J.-M. Beckers, January 2009. Weekly satellite sea surface temperature around Corsica, a DINEOF analysis of AVHRR data (1998), foreseeing comparison with interpolated and modelled fields. In *ASLO aquatic sciences meeting 2009*. Nice, France. URL <http://hdl.handle.net/2268/33595>. Poster.
- C. Troupin, J. Arístegui, E. Barton, P. Sangrà, and J.-M. Beckers, 27 November 2009. Upwelling filaments: a view through 3 different eyes. In *VLIZ Young Marine Scientists' Day*. Vlaams Instituut voor de Zee, Oostende, Belgium. URL <http://hdl.handle.net/2268/113147>. Presentation.
- C. Troupin, J. Arístegui, E. D. Barton, P. Sangrà, and J.-M. Beckers, 27 November 2009. Modeling and observation of an upwelling filament off Cape Ghir (NW Africa) during the CAIBEX campaign. In *VLIZ Young Marine Scientists' Day*. Vlaams Instituut voor de Zee, Oostende, Belgium. URL <http://hdl.handle.net/2268/113146>. Poster.
- C. Troupin, F. Lenartz, D. Sirjacobs, A. Alvera-Azcárate, A. Barth, M. Ouberdous, and J.-M. Beckers, 20 April 2009. Evolution of Western Mediterranean Sea Surface Temperature between 1985 and 2005. In *6th European Geosciences Union General Assembly*. European Geosciences Union, Vienna, Austria. URL <http://hdl.handle.net/2268/115796>. Presentation.
- C. Troupin, F. Machín, M. Ouberdous, D. Sirjacobs, and J.-M. Beckers, 21 April 2009. High-resolution Climatology of the North-East Atlantic using Data-Interpolating Variational Analysis. In *6th European Geosciences Union General Assembly*. European Geosciences Union, Vienna, Austria. URL <http://hdl.handle.net/2268/113163>. Presentation.
- C. Troupin, E. Mason, J.-M. Beckers, M. McWilliams, and P. Sangrà, 27 April 2009. A new mechanism of upwelling generated filaments based on potential vorticity balance. In *II Simposio Internacional de Ciencias del Mar*. Vigo, Spain. URL <http://hdl.handle.net/2268/113149>. Presentation.
- C. Troupin, E. Mason, J.-M. Beckers, and P. Sangrà, 19 April 2009. A new mechanism of upwelling generated filaments based on potential vorticity balance. In *6th European Geosciences Union General Assembly*. European Geosciences Union, Vienna, Austria. URL <http://hdl.handle.net/2268/113239>. Poster.

- A. Barth, A. A. Azcárate, P. Joassin, J.-M. Beckers, and C. Troupin, 21 July-7 August 2008. Introduction to Optimal Interpolation and Variational Analysis. In *SESAME Summer School*. SESAME, Varna, Bulgaria.
- J.-M. Beckers, M. Ouberdous, D. Sirjacobs, and C. Troupin, May 2008. Variational Inverse Method for data interpolation. In *Conseil des Recteurs des universités francophones de Belgique*. Calvi, France. URL <http://hdl.handle.net/2268/114009>.
- C. Troupin, 12 December 2008. Modelling the Cape Ghir Upwelling Filament. In *MARE General Assembly*. Liège, Belgium. URL <http://hdl.handle.net/2268/113237>. Presentation.
- C. Troupin, F. Lenartz, and D. Sirjacobs, 30 September 2008. The Western Mediterranean sea surface temperature dynamics seen through complementary in situ, satellite and modeling approaches over the 1985-1995 period. In *3rd MedCLIVAR-ESF Workshop*. Rhodes, Greece. URL <http://hdl.handle.net/2268/113374>. Presentation.
- C. Troupin, F. Machín, M. Ouberdous, M. Rixen, D. Sirjacobs, and J.-M. Beckers, 3 April 2008. Diva-4.2.1: presentation of the new features. In *SeaDataNet 2nd Plenary Meeting*. HCMR, Athens, Greece. Poster.
- C. Troupin, F. Machín, M. Ouberdous, P. Sangrà, and J.-M. Beckers, 2 June 2008. Climatology and circulation of the Azores-Canary region by Data-Interpolation Variational Analysis. In *International Symposium on Eastern Boundary Upwelling Ecosystems*. Las Palmas de Gran Canaria, Spain. URL <http://hdl.handle.net/2268/114033>.
- C. Troupin, E. Mason, and Sangrà, 6 October 2008. Vorticity balance in the Northwestern African Upwelling. In *ROMS/TOMS European Workshop*. Grenoble, France. URL <http://hdl.handle.net/2268/113664>. Poster.
- C. Troupin, E. Mason, and P. Sangrà, 2 June 2008. Vorticity balance in the Northwestern African Upwelling. In *International Symposium on Eastern Boundary Upwelling Ecosystems*. ULPGC, Las Palmas de Gran Canaria, Spain. URL <http://hdl.handle.net/2268/113238>. Poster.
- C. Troupin, M. Ouberdous, F. Lenartz, D. Sirjacobs, and J.-M. Beckers, 16 October 2008. Using Diva on large datasets: applications and tips. In *3rd SeaDataNet Diva workshop*. Calvi, France. URL <http://hdl.handle.net/2268/113247>. Presentation.
- C. Troupin, M. Ouberdous, F. Machín, M. Rixen, D. Sirjacobs, and J.-M. Beckers, 13 April 2008. Three-dimensional analysis of oceanographic data with the software Diva. In *European Geosciences Union General Assembly*. European Geosciences Union, Vienna, Austria. URL <http://hdl.handle.net/2268/114101>. Poster.
- C. Troupin, M. Ouberdous, M. Rixen, D. Sirjacobs, and J.-M. Beckers, 31 March 2008. Implementation of hydrostatic constraint in the software Diva: Theory and applications. In *International Conference on Marine Data and Information Systems (IMDIS)*. Athens, Greece. URL <http://hdl.handle.net/2268/114102>. Poster.
- C. Troupin, M. Rixen, D. Sirjacobs, and J.-M. Beckers, 19-20 March 2007. Diva: a Data Analysis Software with Generalized-Cross Validation and Quality Control. In *SeaDataNet 1st Plenary Meeting*. OGS, Trieste, Italy. URL <http://hdl.handle.net/2268/114402>. Poster.
- C. Troupin, P. Sangrà, and J. Arístegui, 11 May 2007. Simulation of annual cycles of phytoplankton, zooplankton and nutrients to the South of Gran Canaria. In *GraSMech Poster Day*. Louvain-la-Neuve, Belgium. URL <http://hdl.handle.net/2268/114196>. Poster.
- C. Troupin, P. Sangrà, and J. Arístegui, 28 March 2007. Simulation of annual cycles of phytoplankton, zooplankton and nutrients to the South of Gran Canaria. In *Simposio GLOBEC-IMBER*. Valencia, Spain. URL <http://hdl.handle.net/2268/114198>. Presentation.

C. Troupin, D. Sirjacobs, and J.-M. Beckers, 13 November 2006. Diva Graphical User Interface. In *1st SeaDataNet Diva workshop*. Liège, Belgium. URL hdl.handle.net/2268/114401. Presentation.

Invited Editor

Ocean Dynamics: Special Issue for the 48th Liège Colloquium on Ocean Dynamics

Reviewer

Ocean Science

Ocean Dynamics

Ocean Engineering

Journal of Marine Systems

Doctoral thesis tribunal

2017/09/25 **Bàrbara Barceló-Llull**, *Universidad de Las Palmas de Gran Canaria*,
"Shedding light into mesoscale dynamics and vertical motion through synthetic and in situ observations".

2017/09/16 **Yeray Santana Falcón**, *Universidad de Las Palmas de Gran Canaria*,
"Transport, Respiration, and Sequestration of Organic Carbon in the Canary Current Ecosystem: Relevance within the Global Carbon Cycle".

Undergraduate student training

2012/05/12–
2012/05/19 **Joaquim Pereira Bento**, *Uni-Kiel (Germany)*,
In situ and satellite data interpolation.

2011/09–2011/11 **Nikolaos Zarokanellos**, *HCMR (Greece)*,
Data interpolation for the Eastern Mediterranean Sea.

2009/01–2009/05 **Marc Piedeleu**, *ULPGC (Spain)*,
Analysis of in situ observations south of the Canary Islands.

2008/11–2008/12 **Anna Rabitti**, *OGS (Italy)*,
Spatial interpolation of in situ data in the Adriatic Sea.

Organisation of conferences

Summary From 2006 on I have organised several editions of a training workshop about an interpolation software tool (DIVA) and helped in the organisation of the International Liège Colloquium on Ocean Dynamics. In 2016, I was one of the 5 main organisers of the Colloquium, which gathered over 200 scientists from 40 countries.

2016/05/23–27 **48th International Liège Colloquium on Ocean Dynamics, Submesoscale Processes: Mechanisms, Implications and new Frontiers**", Liège (Belgium), Organising Committee.

- ◆ Invitation of keynote speakers.
- ◆ Applications for sponsorship.
- ◆ Preparation of the scientific program.
- ◆ Design of the conference flyer.
- ◆ Organisation of social events.

2012/10/08–12 **6th Diva workshop**, Roumaillac (France).

- ◆ Scientific content.
- ◆ Invitation of the participants.
- ◆ Logistic: meeting venue, transportation from/to the airport.

2010/11/03–06 **5th Diva workshop**, STARESO, Calvi (France), Main organiser.

2009/10/23–26 **4th Diva workshop**, STARESO, Main organiser.

2008/10/15–17 **3rd Diva workshop**, STARESO, Main organiser.

2007/11/04–06 **2nd Diva workshop**, STARESO, Main organiser.

2012/05/07–11 **44th International Liège Colloquium on Ocean Dynamics, Remote sensing of colour, temperature and salinity – new challenges and opportunities**, Liège (Belgium).

- 2010/04/26–30 **42nd International Liège Colloquium on Ocean Dynamic**, "*Multiparametric observation and analysis of the Sea*", Liège (Belgium).
- 2006/11/13–15 **1st Diva workshop**, University of Liège, Liège (Belgium), Co-organiser.
- ♦ Workshop program.
 - ♦ General logistics.

Misc

Grants and funding

- 2011/04, 2015/04 EGU Young Scientist's Travel Award
- 2008/05–2008/09 Travel grant
(French Community of Belgium).
- 2006/10–2010/09 Fund for Research Training in Industry and Agriculture
(National Fund for Scientific Research, Belgium).
- 2006/02–2006/09 *Erasmus* travel grant
(European Commission).
- 2005/09–2005/12 *Pisart* supervision grant: creation of the presentation support for the course *Thermodynamics of continuous media* in latex
- 2004/02–2004/06 State grant: writing of the course notes for the course *Further Study of Digital Analysis (Equations with Partial Derivatives)*

Representation




- 2015–2016 **Member of the Monitoring Committee of the Framework Agreement between AEMET and SOCIB.**
- 2003–2005 **Student delegate of the "Continuous media" section**, *University of Liège*.
- 2011–2014 **Delegate at the Department Council**, *Astrophysics, Geophysics and Oceanography*, University of Liège.

Memberships

European Geosciences Union (EGU)
American Geophysical Union (AGU)
Cloud Appreciation Society

Personal interests

Running: trails, mountain races, track

-  Photography: landscape, portraits, time-lapse, astro-photography
-  Travel blogging
-  Road cycling
- Weather observation & forecast