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Research Interests

I am interested in understanding the environmental factors that control the **phytoplankton production** and **biogeochemical cycles** in the ocean. I focus on the **physical-biological interactions** influencing the **primary production** and **organic carbon fluxes**, from **bloom events, annual cycles and interannual variability**. I have a strong interest in understanding the **spatiotemporal variability** of these processes. I am also highly interested in the **communication of science** for the youth and general public.

Keywords: primary production, physical-biological interactions, spatiotemporal variability

Education

2016 **Ph.D. in Oceanography**, Université Pierre et Marie Curie, France
Grant from ERC remOcean, and a regional doctoral scholarship

2013 **M.S. in Oceanography and Marine Environment**, Université Pierre et Marie Curie, France
Options: data analysis, remote sensing, ecosystem modelling, planktonic ecosystem

2011 **B.S. in Natural and Life Sciences**, Université de Nantes, France
Options: biology and environment

Research and Professional Experiences

2013 - 2016 **Ph.D. research project, UPMC and CNRS, Villefranche-sur-mer, France**
“Phytoplankton phenology in the Mediterranean Sea”
Research Group: Remote Sensing and Optics Applied to Marine Biogeochemistry
Supervisors: Fabrizio D’Ortenzio and Hervé Claustre (co-chairman Biogeochemical-Argo project)

2013 **Master’s Thesis, UPMC, Villefranche-sur-mer, France**
“Spatial distribution of zooplankton and particulate matter in the oceans”
Research Group: Processes in Pelagic Ecosystems
Supervisors: Lars Stemmann and Lionel Guidi

Scientific Expertise

- > **Multivariate statistical analysis** of remote sensing, *in situ* data sets and long term timeseries
- > **Light-photosynthesis model** applied to *in situ* data to derived **primary production rates**
- > **Phytoplankton pigments data:** analyzis of phytoplankton community structure
- > **AUVs:** analysis of data from **Argo and biogeochemical-Argo floats**, and from **bio-optical gliders**
- > **Bio-optics: calibration and data processing of bio-optical sensors on AUVs**
- > **Underwater imaging technologies** to analyze **particle size distribution and flux**, and **zooplankton**

Peer-Reviewed Publications

IN PRESS / IN REVISION / SUBMITTED

- Mayot, N.**, F. D’Ortenzio, J. Uitz, B. Gentili, J. Ras, V. Vellucci, M. Golbol, D. Antoine and H. Claustre, Influence of the phytoplankton community structure on the spring and annual primary production in the North-Western Mediterranean Sea, *In press, Journal of Geophysical Research: Oceans*, doi:10.1002/2016JC012668.
- Mayot, N.**, F. D’Ortenzio, V. Taillandier, L. Prieur, O. Pasqueron de Fommervault, H. Claustre, A. Bosse, P. Testor and P. Conan, Physical and biogeochemical controls of the phytoplankton blooms in North Western Mediterranean Sea: a multiplatform approach over a complete annual cycle (2012-2013 DEWEX experiment), *In press, Journal of Geophysical Research: Oceans*, doi:10.1002/2016JC012668.
- Testor, P., A. Bosse, L. Houpert, F. Margirier, L. Mortier, H. Le Goff, D. Dausse, M. Labaste, J. Karstensen, D. Hayes, A. Olita, E. Heslop, F. D’Ortenzio, **N. Mayot**, H. Lavigne, O. Pasqueron de Fommervault, L. Coppola, L. Prieur, V. Taillandier, X. Durrieu de Madron, F. Bourrin, G. Many, P. Damien, C. Estournel, P. Marsaleix, I. Taupier-Letage, P. Raimbault, R. Waldman, M-N. Bouin, H. Giordani, G. Caniaux, S. Somot, V. Ducrocq and P. Conan, Dense water formations in the North Western Mediterranean: from the physical forcings to the biogeochemical consequences, *In revision, Journal of Geophysical Research: Oceans*.
- Ayata, S-D., J-O. Irisson, L. Berline, J-C. Dutay, **N. Mayot**, A-E. Nieblas, F. D’Ortenzio, J. Palmieri, G. Reygondeau, V. Rossi, and C. Guieu, Regionalisation of the Mediterranean basin, a MERMEX synthesis, *In revision, Progress in Oceanography*

2017

- Bosse, A., P. Testor, **N. Mayot**, L. Prieur, F. D’Ortenzio, L. Mortier, H. Le Goff, C. Gourcuff, L. Coppola, H. Lavigne and P. Raimbault, A submesoscale coherent vortex in the Ligurian Sea: from dynamical barriers to biological implications, *Journal of Geophysical Research: Oceans*, 122(6).
- Séverin, T., F. Kessouri, M. Rembauville, E. Sánchez-Pérez, L. Oriol, J. Caparros, M. Pujo-Pay, J-F. Ghiglione, F. D’Ortenzio, V. Taillandier, C. Ulses, C. Estournel, **N. Mayot** and P. Conan, Open-ocean convection process: a driver of the winter nutrient supply and the spring phytoplankton distribution in the Northwestern Mediterranean Sea, *Journal of Geophysical Research: Oceans*, 122(6), 4587–4601.

2016

- Biard, T., L. Stemmann, M. Picheral, **N. Mayot**, P. Vandromme, H. Hauss, G. Gorsky, L. Guidi, R. Kiko and F. Not, (2016). In situ observations unveil an unexpectedly large biomass of Radiolaria and Phaeodaria (Rhizaria) in the oceans, *Nature*, 532, 504-507.
- Mayot, N.**, F. D’Ortenzio, M. Ribera d’Alcalà, H. Lavigne, and H. Claustre (2016), Interannual variability of the Mediterranean trophic regimes from ocean color satellites, *Biogeosciences*, 13, 1901–1917.

Conference Presentations

ORAL PRESENTATIONS

- Mayot, N.**, F. D’Ortenzio, J. Uitz and H. Claustre. Phytoplankton traits over an annual cycle in the NW Mediterranean. *OSM 2016, New-Orleans, USA*, February 2016
- Mayot, N.**, F. D’Ortenzio, V. Taillandier, O. Pasqueron De Fommervault, L. Prieur, P. Testor, A. Bosse, P. Conan, F. Kessouri, C. Estournel, H. Claustre. Phytoplankton bloom in the NW Mediterranean: impacts of a deep convection event revealed by Bio-Argo, Bio-Gliders and Ship data. *GAIC2015 – Sustained ocean observing for the next decade, Galway, Ireland*, September 2015
- Mayot, N.**, F. D’Ortenzio, M. Ribera d’Alcalà, H. Lavigne, and H. Claustre. Mediterranean phytoplankton phenology: Interannual variability of phytoplankton biomass and physical-biological interactions from Bio-Argo floats and satellite. *GIS-COOC 2015 Workshop, Bordeaux, France*, February 2015

POSTER PRESENTATIONS

Barbieux, M., C. Scheurle, M. Ardyna, T. Harmel, M. Ferraris, T. Jessin, L. Lacour, N. Mayot, E. Organelli, O. Pasqueron De Fommervault, C. Penkerç'h, A. Poteau, J. Uitz, S. Ramondec, R. Sauzède, V. Vellucci and H. Claustre. Building an early career network through outreach projects: The “mon océan & moi” example. *OSM 2016, New-Orleans, USA*, February 2016

Mayot, N., V. Taillandier, L. Prieur, O. Pasqueron de Fommervault, G. Obolensky, A. Poteau, A. Bosse, P. Testor, P. Conan, F. D’Ortenzio. Combining Bio-Argo Floats with other observing platforms to evaluate the physical-biogeochemical interactions in the North Western Mediterranean Sea. *5th Euro-Argo User Workshop, Brest, France*, March 2015

Scientific Oceanographic Cruise

Bio-Argo-Med cruise (NAOS project), R/V *Thetis II*, Mediterranean Sea – May 2015 (1 month)

- > Recovery and deployment of profiling floats (2 Argo floats, 8 biogeochemical-Argo floats)
- > Responsible for the calibration of oxygen optodes on biogeochemical-Argo float
- > Collection of seawater samples for the measurements of nutrient concentration
- > Collection and filtration of seawater samples for phytoplankton pigment determination

Training Courses

- > Empirical Orthogonal Functions analysis, *Cécile Mallet & Sylvie Thiria* – UPMC doctoral school
- > Modelling of marine environments & Multivariate statistical analysis – Master UPMC
- > Marine biogeochemistry, climate and ecology, *Laurent Bopp & Marina Levy* – UPMC Doctoral school

Outreach and Communication Activities

2017 **Communication manager at the Villefranche Oceanographic Laboratory**, including social media management, **for outreach projects and the Biogeochemical-Argo program**

2013 - 2017 **Scientific mediator for school classes, preparation of the materials: courses and presentations**, at the regional level (Alpes-Maritimes, France), for the projects:

- > **Adopt a Float:** “The project is based on the adoption by a class of an autonomous profiling float. The children follow it, which allows them to participate in the observations collected by this float and the sciences associated.”
- > **MEDITES:** “The project favors collaboration between the scientific and educational worlds to provide an access to scientific culture for the youth, to awaken their curiosity and critical thinking, and also to promote and enhance the diversity.”

2014 & 2015 **Co-organizer of the event “Young Researchers’ Day”** (Villefranche-sur-mer, France)

2013 & 2015 **Preparation of talks, suitable for 7 to 77 years old**, for the **French Science Festival**.

Computer Skills and Languages

Computer skills:

- > **Data analysis softwares:** - MATLAB
- R
- > **Operating Systems:** - Windows
- Linux
- > **Applications:** - Microsoft Office
- LibreOffice
- Creative Suite Adobe

Languages:

- > **French:** mother tongue
- > **English:** spoken, read and written