



Contact

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Languages

French, native language

English, fluent

Spanish, intermediate

Computing

- R ● ● ● ● ○
- Python ● ● ● ● ○
- Matlab ● ● ○ ○ ○
- Github ● ● ○ ○ ○
- Bash ● ● ○ ○ ○
- OS ● ● ● ● ○
- Windows, Unix ● ● ○ ○ ○

References

- Sakina-Dorothée Ayata
Associate Professor, Sorbonne University
sakina-dorothee.ayata@locean.ipsl.fr

- Jean-Olivier Irisson,
Associate Professor, Sorbonne University
jean-olivier.irisson@imev-mer.fr

- Lars Stemmann,
Professor, Sorbonne Université,
lars.stemmann@imev-mer.fr

Laetitia Drago

Research background

- 2024-26 **Postdoctorate: Machine learning and marine data**
LOCEAN-IPSL UMR 7159, Paris, Sorbonne Université CNRS-IRD-MNHN
Supervision : Sakina-Dorothée Ayata
Funding : NECCTON Horizon Europe RIA under Grant Number 101081273
- Spatial distribution of zooplankton taxonomic and functional diversity in the Iroise Marine Natural Park (PNMI)
 - Use of quantitative imaging data (UVP5, Zooscan), environmental data, and machine learning
 - Link between functional diversity and environment
- 2020-23 **PhD: Global Analysis of the Biological Carbon Pump Using Quantitative Imaging Data**
LOV UMR 7093, Villefranche sur mer, Sorbonne Université
Supervision : Lars Stemmann, Rainer Kiko,
Funding : 50% H2020 TRIATLAS project and 50% Doctoral School ED129
- Spatial distribution of zooplankton biomass using quantitative imaging data (UVP5) and machine learning (niche models)
 - Compilation of imaging and climatology data (WOA, Copernicus, NOAA)
 - Export phenomenon in the North Atlantic during the EXPORTS campaign, 2021
 - Field campaigns: Norwegian Fjords and North Atlantic
- 2020 **Master 2 Internship: Global Distribution of Macrozooplankton Biomass Estimated by In Situ Imaging**
LOV UMR 7093, Villefranche sur mer, Sorbonne Université
Supervision : Jean-Olivier Irisson, Lars Stemmann, Thelma Panaïotis
- Spatial distribution of zooplankton using quantitative imaging data (UVP5) and machine learning (niche models)
 - Analysis of a large database (25 oceanographic projects)
- 2019 **Master 1 Internship: Numerical Simulations of Larval Dispersal of Paramuricea clavata**
LECOB UMR 8222, Banyuls sur mer, Sorbonne Université
Supervision : Katell Guizien
- Lagrangian models of larval dispersal and population connectivity
- 2022 **FIDLE Introduction to Deep Learning** 17h, CNRS
Convolutional neural networks, evaluation of regression and classification models, sequential and temporal data. Theory and practice (Python).
- 2022 **Ocean Literacy** 3 weeks, Sorbonne University and IMBRSea
Communicating with different types of audiences (age, profession) using innovative learning methods.
- 2021 **ML4Oceans** 1 week, Sorbonne University
Summer school on the use of artificial intelligence and machine learning tools in oceanography. Theory and practice (Python).
- 2018-20 **Master's in Marine Sciences** Sorbonne University
Specialization: Functioning of Marine Ecosystems and Global Change, with high honours. Functional ecology, oceanography, modeling, data processing.
- 2015-18 **Multivariate Analysis for Marine Ecology** 3 weeks, Sorbonne University
Methodologies for environmental data analysis. Theory and practice (R).
- 2015-18 **Bachelor's Degree in Life Sciences and Health** University of Nice
Specialization: Biology of Organisms and Ecosystems, with high honours
Ecology, organism and ecosystem diversity, statistics, genetics.

Publications

- Ceballos Romero E., Buesseler K., Fields E., Kiko R., Estapa M., Karp-Boss L., Clevenger S., **Drago L.**, Siegel D., 2025. On the assessment of sinking particle fluxes from in situ particle size distributions. *EarthArXiv* (in review). <https://doi.org/10.31223/X5899D>
- Sato M., Erickson Z.K., Drago L., Maas A.E., McMonagle H., Steinberg D.K., 2025. Temporal dynamics of mesopelagic fishes within a mesoscale eddy: a Lagrangian perspective. *Limnology and Oceanography Letters* (in review)
- Nocera A.C., Stemmann L., Babin M., Biard T., Coustenoble J., Carlotti F., Coppola L., Courchet L., Drago L., Elineau A., Guidi L., Hauss H., Jalabert L., Karp-Boss L., Kiko R., Laget M., Lombard F., McDonnell A., Merland C., Motreuil S., Panaïotis T., Picheral M., Rogge A., Waite A., Irisson J.-O., 2025. A global consistent database of plankton and detritus from in situ imaging by the Underwater Vision Profiler 5. *Earth Syst. Sci. Data Discuss.* (in review) <https://doi.org/10.5194/essd-2025-522>
- Soviadan D., Beck M., Habib J., Baudena A., **Drago L.**, Accardo A., Laxenaire R., Speich S., Brandt P., Kiko R., Stemmann L., 2025. Marine snow morphology drives sinking and attenuation in the ocean interior. *Biogeosciences*, 22, 3485–3501 (in review). <https://doi.org/10.5194/bg-22-3485-2025>
- Siegel D., Estapa M., Burd A., Fields F., Johnson L., Romanelli E., Passow U., **Drago L.**, Kiko R., Durkin C., Omand M., Brzezinski M., Buesseler K., Cetinic I., “Particle dynamics, sinking carbon export and the demise of the North Atlantic spring bloom: Results from the EXPORTS-NA field campaign”, *PNAS* (submitted), <https://doi.org/10.31223/X58709>
- **Drago L.**, Caillau C., Pouline P., Beker B., Jalabert L., Romagnan J.-B., and Ayata S.-D., Long-term plankton and environmental monitoring dataset from the marine protected area of the Iroise Marine Natural Park (2010–2023) in the Iroise Sea, North Atlantic, *Earth Syst. Sci. Data*, 17, 6583–6600, <https://doi.org/10.5194/essd-17-6583-2025>, 2025.
- Soviadan D., Dugenne M., **Drago L.**, Biard T., Trudnowska E., Lombard F., Romagnan J.-B., Jamet J.-L., Kiko R., Gorsky G., Stemmann L., Combining in situ and ex situ plankton image data to reconstruct zooplankton (>1 mm) volume and mass distribution in the global ocean, *Journal of Plankton Research*, Volume 46, Issue 5, September/October 2024, Pages 461–474, <https://doi.org/10.1093/plankt/fbae046>
- Thepault A., Rodrigues A., **Drago L.**, Gremillet D., “Food chain without giants: Historical trophic modelling indicates 70% increase in little auk populations after bowhead whaling in the Atlantic Arctic”, *Proceedings of the Royal Society B*, 2024, <https://doi.org/10.1098/rspb.2024.1183>
- Laget M., **Drago L.**, Panaïotis T., Kiko R., Stemmann L., Rogge A., Llopis-Monferrer N., Leynaert A., Irisson J.-O., and Biard T., “Global census of the significance of giant mesopelagic protists to the marine carbon and silicon cycles”, *Nature*, 2024 <https://doi.org/10.1038/s41467-024-47651-4>
- Dugenne, M., Corrales-Ugalde, M., Luo, J., Kiko, R., O'Brien, T., Irisson, J.-O., Lombard, F., Stemmann, L., Stock, C., Anderson, C. R., Babin, M., Bhairy, N., Bonnet, S., Carlotti, F., Cornils, A., Crockford, E. T., Daniel, P., Desnos, C., **Drago, L.**, Elineau, A., Fischer, A., Grandrémy, N., Grondin, P.-L., Guidi, L., Guieu, C., Hauss, H., Hayashi, K., Huggett, J. A., Jalabert, L., Karp-Boss, L., Kenitz, K. M., Kudela, R. M., Lescot, M., Marec, C., McDonnell, A., Mériguet, Z., Niehoff, B., Noyon, M., Panaïotis, T., Peacock, E., Picheral, M., Riquier, E., Roesler, C., Romagnan, J.-B., Sosik, H. M., Spencer, G., Taucher, J., Tilliette, C., and Vilain, M.: First release of the Pelagic Size Structure database: Global datasets of marine size spectra obtained from plankton imaging devices, *Earth Syst. Sci. Data Discuss.*, 2024, <https://doi.org/10.5194/essd-2023-479>
- **Drago L.**, Panaïotis T., Irisson J.-O., Babin M., Biard T., Carlotti F., Coppola L., Guidi L., Hauss H., Karp-Boss L., Lombard F., McDonnell A., Picheral M., Rogge A., Waite A., Stemmann L., Kiko R., 2022, Global Distribution of Zooplankton Biomass Estimated by In Situ Imaging and Machine Learning, *Front. Mar. Sci.*, <https://doi.org/10.3389/fmars.2022.894372>

Conferences and posters

- 2026
Ocean Science Meeting, Glasgow (February) – 3 posters:
- Bringing Ocean Science to Kindergarten Children: A Co-constructed Plankton Education Project (Drago L., Ayata S.D.)
- Spatio-temporal patterns in zooplankton functional traits: long-term imaging insights from the Iroise Marine Natural Park (Drago L., Caillau C., Pouline P., Ayata S.D.)
- Predicting plankton diversity from Copernicus model outputs using machine learning (Ayata S.D., Drago L., et al.)
- 2025
Ecostat, Metz – Spatial distribution of zooplankton diversity in the PNMI (presentation)
- 2024
SAMA, Paris – Global distribution of zooplankton biomass estimated by in situ imaging and machine learning (presentation)
Marine Life 2030 Seminar – Monitoring plankton diversity and dynamics in the Iroise Marine Natural Park (presentation)
PNMI Seminar – Monitoring plankton diversity and dynamics (presentation)
- 2023
ASLO, Spain – North Atlantic biological pump dynamics in an eddy revealed via in situ imaging (presentation)
- 2022-2021
TRIATLAS General Assembly – Global distribution of zooplankton biomass (2022, presentation; 2021, poster)
ASLO – Global distribution of macroplankton biomass estimated by in situ imaging (2021, presentation)

Awards and Grants

- December 2023: Laureate of the "Scientific Publication Prize for Thesis" from Fondation de la Mer and the Ocean Institute of the Sorbonne University Alliance
- Septembrer 2022 : 2nd place for best poster at the LOV seminar
- September 2021 : 2nd place for best poster at the General Assembly of the European TRIATLAS H2020 project
- 2020-2023 : Half-tuition scholarship from the Doctoral School ED129 of Sorbonne University

University Services

- 2018-2023 2020-23 2020-23
Co-organizer of "LOV Student Seminars"
Welcoming new PhD students and interns, practice sessions for thesis defenses, themed seminars
- 2020-23
Representative of PhD students in several committees
OSU-STAMAR, Villefranche Oceanography Laboratory, Institute of the Sea of Villefranche
- 2020-23
Co-organizer of the "Green Lunch"
Weekly discussions in english on environmental protection and sustainable development

Teaching and Supervision

- 2024
Tara Ocean Winter School QLife
Zooplankton distribution and in situ imaging data 3.5h, ENS
- 2022-23
Green Ocean
Marine plankton diversity and biological invasions 6h, ENSTA
- 2022-23
Teaching Assistantship Contract
Courses and practical work with undergraduate and master's students.
Modeling, taxonomy, and plankton diversity. 128h, Sorbonne Université
- 2021-24
Co-supervision of Internships
 - Bachelor's 2: "Impact of the Iroise coastal front on phytoplankton and zooplankton dynamics in the Iroise Marine Natural Park", Sofia Mastouri (2 weeks)
 - Master's 2: "Impacts of zooplankton on the carbon cycle of the equatorial Atlantic", Hélène Thibault (6 months)
 - Master's 1: "Study of zooplankton communities along the equatorial Atlantic", Hannah Haines (2 months)

Outreach and Scientific communication

- 2024-26
Project "[Shapes and Colors of Plankton](#)"
Co-creation with Sakina-Dorothée Ayata of workshops for a kindergarten in partnership with the Aquarium of the Porte Dorée.
Development of worksheets on shapes, counting, and colors with my plankton illustrations.
Co-creation of a board game on the plankton food web.
- 2024-21-26
Scientific Instagram Account "[Marine Life Tales](#)"
Presentation of my research and teaching activities on the marine world
- 2024-21-23
Science festival « Fête de la Science »
 - Introduction to marine plankton through games (kindergarten, 1st grade)
 - Speed meetings with high school students on science career guidance
- 2023
Pint of Science, "[Plankton study](#)"
Science outreach on zooplankton research
- 2023
Animatrice scientifique, *Petits débrouillards*
Organisation d'activités auprès de publics divers notamment sur les mers et littoraux.
- 2021-22
Participation in EXPORTS Campaign Communication
[Campaign postcard](#), [interviews with the communication team](#) and "[Imaging the Ocean](#)", blog post for NASA Earth Expeditions
- 2020
[PlanktonID](#) Website Translation (anglais-français)