

BAPTISTE ALGLAVE

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https://balglave.github.io/b_alglave/

RESEARCH INTEREST

I am an applied statistician with a specific interest in spatio-temporal modeling and applications in marine ecology and environment. During my PhD, I developed statistical hierarchical models combining commercial catch declarations data and scientific survey data to infer fish spatio-temporal distribution and identify their essential habitats for use in Marine Spatial Planning. Specifically, I developed methods to combine heterogeneous and massive data sources while accounting for preferential sampling of fisheries commercial data and difference in spatial resolution between the distinct data sources (change of support issues).

From January to June 2023, I was a post-doc fellow at the University of Washington (Seattle, USA) to develop spatio-temporal population dynamics models to project and address the effect of climate change on harvested population with the Snow Crab of the Bering Sea as case study.

I am now assistant professor at the University Institute of Technology (IUT) in Vannes and at the Lab-STICC for research (DECIDE team). With the group focused on GIS, I am working on the interaction of urban landscape and climate. We aim at developing operational tools to help managers to plan urban areas in a context of land pressure, threat on ecosystems and climate change.

CURSUS

Associate professor

Since September 2023

Research laboratory in information and communication science and technology (Lab-STICC, CNRS UMR 6285), team DECIDE.
Université Bretagne Sud (UBS), IUT Vannes, cursus of Data Science.

Postdoc

January - June 2023

University of Washington, School of Aquatic and Fishery Sciences and NOAA
Subject: Dimension reduction methods for spatio-temporal data.
Supervisors: Jim Thorson.

PhD: Ifremer Nantes and Institut Agro (Rennes) - UMR DECOD

2019 - 2022

Subject: Inferring fish spatio-temporal distribution and identifying essential habitats: tackling the challenge of preferential sampling and change of support to integrate heterogeneous data sources. [link](#)
Supervisors: Youen Vermard, Marie-Pierre Etienne, Mathieu Woillez, Etienne Rivot.

MSc Institut Agro (Rennes)

2018 - 2019

CPGE Janson de Sailly (Paris)

2014 - 2016

SCIENTIFIC PUBLICATIONS

Peer-reviewed

Alglave B., Rivot E., Etienne M.P., Woillez M., Thorson J.T., Vermard Y. (2022). **Combining scientific survey and commercial catch data to map fish distribution.** ICES Journal of Marine Science. <https://doi.org/10.1093/icesjms/fsac032>

Alglave B., Vermard Y., Rivot E., Etienne M.P., Woillez M. (2023). **Identifying mature fish aggregation areas during spawning season by combining catch declarations and scientific survey data.** Canadian Journal of Fisheries and Aquatic Sciences. <http://dx.doi.org/10.1139/cjfas-2022-0110>

Olmos M., Cao J., Thorson J.T., Punt A.E., Monnahan C.C., Alglave B., Szuwalski C. (2023). **A step towards the integration of spatial dynamics in population dynamics models: Eastern Bering Sea snow crab as a case study.** Ecological Modeling. <https://doi.org/10.1016/j.ecolmodel.2023.110484>

Rovellini A., Punt A.E., Bryan M.D., Kaplan I.C., Dorn M.W., Aydin K., Fulton E.A., Alglave B., Baker M.R., Carroll G., Ferriss B.E., Haltuch M.A., Hayes A.L., Hermann A.J., Hernvann P.Y., Holsman K.K., Liu O.R., McHuron E., Morzaria-Luna H.N., Moss J., Surma S., Weise M.T., 2024. **Linking climate stressors to ecological processes in ecosystem models, with a case study from the Gulf of Alaska**. ICES Journal of Marine Science. <https://doi.org/10.1093/icesjms/fsae002>

Under review

Alglave B., Kristensen K., Vermard Y., Rivot E., Woillez M., Etienne M.P. (*under review*). **Inferring fine scale wild species distribution from spatially aggregated data**. [link](#)

Alglave Baptiste, Olmos et al. (*under review*). **Investigating fish adult phenology through Empirical Orthogonal Functions**.

In prep

Alglave Baptiste and Thorson James T. (*in prep*). **Empirical Orthogonal functions for ecology** .

Szuwalski Cody, Alglave Baptiste, Olmos Maxime, Punt Andre, Veron Matthieu (*in prep*). **Integrating climate effects in multiple population processes for fisheries projections**.

CONFERENCE PRESENTATIONS

International conferences

Erwan Bocher, Matthieu Gousseff, Bernard Jérémy, Elisabeth Le Saux Wiederhold, Baptiste Alglave, and Emmanuelle Kerjouan. **Comparison of different methods to produce local climate zone maps using the LczExplore tool**. EGU General Assembly 2024, Vienna, Austria, 14–19 Apr 2024, EGU24-15984. [link](#)

Szuwalski Cody, Alglave Baptiste, Olmos Maxime, Punt Andre, Veron Matthieu. **Population feedback can modulate climate change impacts**. PICES-2023 Annual Meeting. November 2023, Seattle, USA.

Alglave Baptiste, Punt André, Rivot Etienne, Szuwalski Cody, Etienne Marie-Pierre. **Integrating massive and heterogeneous spatiotemporal data to infer spatial processes**. Marine ecology as a field of application. French Society of Statistics. July 2023, Brussel, Belgium.

Alglave Baptiste, Vermard Youen, Etienne Marie-Pierre, Woillez Mathieu, Rivot Etienne (2022). **Can we use catch declarations data to map fish spatial distribution?** International Statistical Ecology Conference (ISEC). June 2022, Cape Town, South Africa. [link](#)

Alglave Baptiste, Vermard Youen, Etienne Marie-Pierre, Woillez Mathieu, Rivot Etienne (2021). **Can we trust commercial landings data to identify essential habitats of harvested fish? Application to several demersal species in the Bay of Biscay**. ISOBAY 17 - XVII International Symposium on Oceanography of the Bay of Biscay. June 2021, virtual event. [link](#)

National conferences

Alglave Baptiste, Thorson James T., Obakrim Said, Dufée Benjammin (2024). **How to best represent spatio-temporal data?** Annual meeting of the GdR ‘Ecology and statistics’. April 2024, Montpellier, France. [link](#)

Alglave Baptiste, Vermard Youen, Bez Nicolas, Etienne Marie-Pierre, Kristensen Kasper, Thorson James T., Woillez Mathieu, Rivot Etienne (2022). **Can we trust commercial catch declarations data to map fish spatio-temporal distribution and identify fish essential habitats?** 15th conference of the AFH ‘Fisheries research and sustainable development’. June 2022, Brest, France. [link](#)

Florian Quemper, Baptiste Alglave, Marie-Pierre Etienne, Etienne Rivot, Mathieu Woillez, Youen Vermard, Mathieu Doray et Guillermo Boyra (2022). **Etude de la distribution spatio-temporelle de la sardine (*S. pilchardus*) dans le Golfe de Gascogne**. 15th conference of the AFH ‘Fisheries research and sustainable development’. June 2022, Brest, France. [link](#)

Alglave Baptiste, Kristensen Kasper, Vermard Youen, Rivot Etienne, Woillez Mathieu, Etienne Marie-Pierre (2022). **Downscaling coarse observations to predict continuous species spatio-temporal distribution**. Meeting of the RESSTE network ‘Spatio-temporal statistics for remote sensing data’. May 2022, Paris, France. [link](#)

Alglave Baptiste, Kristensen Kasper, Vermard Youen, Rivot Etienne, Woillez Mathieu, Etienne Marie-Pierre (2022). **Going from coarse landings data to fine scale species distribution.** Annual meeting of the GdR 'Ecology and statistics'. April 2022, Montpellier, France. [link](#)

Alglave Baptiste, Vermard Youen, Etienne Marie-Pierre, Woillez Mathieu, Rivot Etienne (2021). **Can we identify fish essential habitats with landings data? Application to the common sole of the Bay of Biscay.** Ecolstat 2021: annual meeting of the GdR 'Ecology and statistics'. April 2021, virtual event. [link](#)

Alglave Baptiste, Etienne Marie-Pierre, Vermard Youen, Woillez Mathieu, Rivot Etienne (2020). **Spatio-temporal modeling of fishery functional zones by combining catch declarations data and scientific survey data.** Annual meeting of the GdR 'Ecology and statistics'. March 2020, Rennes, France. [link](#)

Alglave Baptiste, Lehuta Sigrid, Leforestier Sophie, Vermard Youen (2019). **Management Strategy Evaluation of the Eastern English Channel common sole: management approach under uncertainty.** 14th conference of the AFH 'Fisheries research and sustainable development'. June 2019, University of Caen Normandie, France. [link](#)

Seminars

Alglave Baptiste. **EOF and derived methods.** Séminaire Statistiques au sommet de Rochebrune 2024. [link](#)

Alglave Baptiste. **Statistics, fisheries management and spatial modelling: towards spatio-temporal stock assessment methods.** 8th meeting of statistics. Data science for sea and coastal systems ([website](#)). Université Bretagne Sud. November 2023. [link](#)

Tardivy Juliette, Alglave Baptiste. **Cartographie des frayères des espèces halieutiques basée sur le croisement des données 'VMS x logbooks' et des données de campagnes scientifiques.** Seminar on fisheries functional zones ([website](#)). Ifremer Nantes. November 2023. [link](#)

Alglave Baptiste. **Integrating heterogeneous and massive spatio-temporal data to infer spatial processes. Fisheries science as field of application.** Quantitative seminars, School of Fisheries and Aquatic Science, University of Washington, Seattle. March 2023.

Alglave Baptiste. **Integrating heterogeneous and massive spatio-temporal data to infer spatial processes. Fisheries science as field of application.** MIA, AgroParisTech, Paris Saclay. April, 2023.

Alglave Baptiste. **Inferring fish spatio-temporal distribution and identifying essential habitats: tackling the challenge of preferential sampling and change of support to integrate heterogeneous data sources.** [Ecodep seminars](#), Cergy University. January 2023.

Alglave Baptiste. **Can we identify essential habitats with landings data?** ESEminaire, Institut Agro, Rennes. March, 2021.

Alglave Baptiste. **How to combine commercial and scientific data to infer fish spatial distribution?** Doctoral students' day. Ifremer, Visio. January 2021.

Alglave Baptiste. **How to combine commercial and scientific data to infer fish spatial distribution?** Causerie, EMH research unit, Ifremer Nantes. November, 2020.

SUPERVISORY EXPERIENCE

CDD Ifremer

January 2023 - June 2024

Subject: Packaging and applying spatio-temporal models to identify fish essential habitats for all French facades.

CDD employee: Juliette Casemajor.

Co-supervision with: Mathieu Woillez.

Master

May - July 2022

Subject: Contributions of the lognormal Poisson model for multivariate analysis of ecological communities. [link](#)

Student: Théo Fabien.

Co-supervision with: Marie-Pierre Etienne, Thomas Outrequin and Jean-Louis Marchand.

Master thesis

February - August 2021

Subject: Combining commercial and scientific data to infer the space-time distribution of sardine in the Bay of Biscay. [link](#)

Student: Florian Quemper.

Co-supervision with: Etienne Rivot and Marie-Pierre Etienne.

TEACHING

Maximum likelihood estimation (BSc) IUT Vannes, cursus of data science (UBS).	2023
Descriptive statistics (BSc) IUT Vannes, cursus of data science (UBS).	2023
Introduction to spatio-temporal modeling for ecology (MSc) Institut Agro (Rennes). slides and codes	2022
Student project in data science (MSc) Institut Agro (Rennes).	2020 - 2021
Practical work in statistics for fisheries science (MSc) Institut Agro (Rennes).	2020
Practical work in basics of probability theory (BSc) University of Nantes.	2019 - 2020

PROJECTS AND WORKING GROUPS

ACLIM: The Alaska Climate Integrated Modeling Project The Alaska Climate Integrated Modeling project (ACLIM) is an interdisciplinary collaboration to project and evaluate climate impacts on marine fisheries in the Bering Sea, Alaska. link <i>Head of the project:</i> Kirstin Holsman (NOAA).	January - June 2023
MACCO project Identification of the target species and by-catch of the Bay of Biscay mixed fishery and evaluation of alternative management strategies. link <i>Head of the project:</i> Stéphanie Mahévas (Ifremer Nantes).	2019 - 2024
EWG 22-01 - West Med closure areas Working group aiming at identifying and evaluating the potential closure areas for the demersal species of the Western Mediterranean Sea.	2022
Ifremer working group ‘Science with and for society’ Working group aiming at evaluating the interactions between science and society within Ifremer. It led to several surveys among researchers, post-doctoral and doctoral students and to internal reports for the Ifremer scientific direction.	2021 - 2022
SMAC project - Sole of the Eastern English Channel Project aiming at investigating stock structure of the Eastern English Channel and adapting management to the available knowledge on stock structure. <i>Head of the project:</i> Marie Savina-Rolland (Ifremer Lorient).	2019

TECHNICAL SKILLS AND PACKAGES

Inference methods	Maximum likelihood inference, Bayesian inference
Languages	R, C++, Java, Python, SQL
Tools	Git, LaTeX, TMB, R-INLA, JAGS, Nimble, PostgreSQL
Packages	FishMap

TECHNICAL REPORTS

Alglave Baptiste, Vermard Youen (2022). Ad-hoc contract for the preparation of STECF EWG 22-01 concerning closure areas to protect juveniles and spawners of all demersal stocks in western Mediterranean Sea.

WORKSHOP, COURSEWORK AND OTHER CONFERENCES

Statistical Methods for Spatial Data, STAT 554, University of Washington. 2023
by John Wakefield.

Annual meeting of the Mexico network, Irstea, Bordeaux 2022

Finist'R workshop 2022

Bootcamp of State Of the R, organized by the MIA. Biological station of Paimpont. [link](#)

Stats aux sommets, MIA Paris, visio 2021
with an introduction to R-INLA and the SPDE approach by Thomas Opitz and Denis Allard.

Finist'R workshop 2020

Bootcamp of State Of the R, organized by the MIA. Biological station of Roscoff. [link](#)

Numerical methods for stochastic differential equation, Centrale Nantes 2019 - 2020
by Marie Billaud-Friess.

GRANT

Grant for the international mobility of doctoral students 2021

Grant obtained from Ifremer for the mobility at DTU Aqua (Danemark).

SCIENTIFIC ANIMATION

Workshop on spatio-temporal modelling for ecology 2023 - ...

With Maxime Olmos (Ifremer). Biannual meeting bringing together ecologists and statisticians to discuss spatio-temporal modeling and its application to ecological case studies.

Space-time seminars January - June 2023

Organization of bimensual seminars with a focus on spatial and spatio-temporal statistics.

Amédée seminars 2020-2021

Organization of semestrial seminars with a focus on methodological development in fisheries science and marine ecology. [link](#)