

# BAPTISTE ALGLAVE

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## RESEARCH INTEREST

I work as an applied statistician with a specific interest in spatial analysis and statistical modeling for ecology. I hold a position as assistant professor in statistics at the University Bretagne Sud and contribute to research within the Lab-STICC (UMR 6285 – GEODATICS team).

Since my PhD, I have developed statistical methods to infer and analyse the spatio-temporal dynamics of ecological species. As a member of the geography group of the Lab-STICC I broaden my research scope to urban climate, spatial planning and related fields.

> *Key words:* spatial and spatio-temporal statistics, spatial analysis, environment, ecology, species distribution, spatial planning, climate change.

## CURSUS

### Associate professor in statistics

Since September 2023

Université Bretagne Sud (UBS), IUT Vannes, Data Science department.

Research laboratory in information and communication science  
and technology (Lab-STICC, CNRS UMR 6285), GEODATICS team.

CNU section : 26

### Postdoc

January - June 2023

University of Washington / NOAA

*Subjects:*

- 1/ Dimension reduction methods for spatio-temporal ecological data.
- 2/ Spatio-temporal population dynamics modeling under climate change.

*Supervisors:* Jim Thorson, André Punt, Cody Szwalski.

### 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:* Marie-Pierre Etienne, Youen Vermand, Mathieu Woillez, Etienne Rivot (HDR).

## SCIENTIFIC PUBLICATIONS

Alglave B., Mourguiaut B., Vermand Y., Rivot E., Woillez M., Kristensen K., Etienne M.P. (2025). *Change of support for zero-inflated data: deriving fine scale species distribution inferences from spatially aggregated data.* Journal of the Royal Statistical Society Series C: Applied Statistics. <https://doi.org/10.1093/rssc/qlaf056>

Michel M., Alglave B., Olmos M., Torterotot M., Virgili A., Martin-Marin S., Royer J.Y., Samaran F. (2025). *Modelling the influence of environmental factors on the acoustic presence of blue whale populations in the Southern Indian Ocean.* Scientific Reports (Nature). <https://doi.org/10.1038/s41598-025-02941-9>

Alglave B., Olmos, M., Casemajor, J., Etienne, M. P., Rivot, E., Woillez, M., Vermand, Y. (2024). *Investigating fish reproduction phenology and essential habitats by identifying the main spatio-seasonal patterns of fish distribution.* ICES Journal of Marine Science. <https://doi.org/10.1093/icesjms/fsae099>

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>

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>

Alglave B., Vermaud 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>

Alglave B., Rivot E., Etienne M.P., Woillez M., Thorson J.T., Vermaud 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>

## CONFERENCE PRESENTATIONS

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### International conferences

Alglave B., Besnard P., Bernard J., Bocher E., Gousseff M., Leconte F. (2024). *Typology of French municipalities based on urban heat island factors.* Spatial Analysis and GEOMatics (SAGEO). Avignon, France, May 2025. [link](#)

Alglave B., Obakrim S., Dufée B., Thorson J. T. (2024). *How best to ordinate spatio-temporal data?* International Statistical Ecology Conference. Swansea, United Kingdom, July 15-19 2024. [link](#)

Alglave B., Etienne M.P., Vermaud Y., Woillez M., Rivot E. (2024). *Integrating massive and heterogeneous spatio-temporal data in environmental science and ecology. Fisheries as case of application.* Fifteenth International Conference on Geostatistics for Environmental Applications. Chania, Greece, June 19-21, 2024. [link](#)

Alglave B., Dufée B., Obakrim S., Thorson J.T. (2024). *Empirical Orthogonal Functions and their latest developments. Dealing with orthogonality and sparse data.* Fifteenth International Meeting on Statistical Climatology (IMSC). Centre National de Recherche Météorologique, Toulouse, France, June 24-28, 2024. [link](#)

Bocher E., Gousseff M., Bernard J., Le Saux E., Alglave B., and Kerjouan E. (2024). *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](#)

Szuvalski C., Alglave B., Olmos M., Punt A.E., Veron M. (2023). *Population feedback can modulate climate change impacts.* PICES-2023 Annual Meeting. November 2023, Seattle, USA.

Alglave B., Vermaud Y., Etienne M.P., Woillez M., Rivot E. (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 B., Vermaud Y., Etienne M.P., Woillez M., Rivot E. (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 and local conferences

Alglave B. *Identifying urban profiles with regard to overheating factors. Application to French municipalities.* Tenth meeting of statistics. Data science : history and territories ([website](#)). Université Bretagne Sud. December 2025. Invited speaker. [link](#)

Alglave B. (2025). *Statistical integration for spatio-temporal modeling of species distribution in ecology.* Journées de STAtistique de Rennes (JSTAR) 2025. Invited speaker.

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

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

Alglave B., Punt A.E., Rivot E., Szwalski C., Etienne M.P. (2023). *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 B., Kristensen K., Vermaud Y., Rivot E., Woillez M., Etienne M.P. (2022). *Downscaling coarse observations to predict continuous species spatio-temporal distribution.* Meeting of the RESSTE network (Risks, extremes and spatio-temporal statistics). May 2022, Paris, France. [link](#)

Alglave B., Kristensen K., Vermaud Y., Rivot E., Woillez M., Etienne M.-P. (2022). *Going from coarse landings data to fine scale species distribution.* Annual meeting of the GdR ‘Ecology and statistics’. April 2022, Montpellier, France. [link](#)

## Seminars

Alglave B. *Integrating massive and heterogeneous spatio-temporal data in environmental science. Marine ecology as field of application.* Seminar of the Mathematics Laboratory of Bretagne Atlantique (LMBA). February 2024. [link](#).

Alglave B. *EOFs and derived methods.* ‘Statistiques au sommet’ ([website](#)), Rochebrune. Organizer: MIA Paris Saclay. March 2024. [link](#)

Alglave B. *Integrating massive and heterogeneous spatio-temporal data in environmental science. Marine ecology as field of application.* Seminar of the Mathematics Laboratory of Bretagne Atlantique (LMBA). February 2024. [link](#).

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

Alglave B. *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.

## TECHNICAL REPORTS

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Casemajor J., Alglave B., Woillez M. (2024). *Mapping the spawning grounds of fish species in Metropolitan France.* Ref. PDG/RBE/HALGO/LBH-2024-02. Ifremer. [link](#)

Alglave B., Vermaud Y. (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.* The report is not public, but key results are available on the [link](#)

## PROJECTS AND WORKING GROUPS

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### MOBYDIC project

2025 - 2030

The MOBIDYC (Promoting active and sustainable MOBility through InterDisciplinarY Co-construction) project aims to investigate the key human and environmental factors of active and sustainable mobility (here cycling) based on an interdisciplinary approach combining machine learning, sport science and geography.

*Heads of the project:* Léa Gottsmann (ENS Rennes), Marie-Pierre Etienne (ENSAI/CREST).

### ACLIM: The Alaska Climate Integrated Modeling Project

2023

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](#)

*Head of the project:* Kirstin Holsman (NOAA).

### MACCO project

2019 - 2024

Identification of the target species and by-catch of the Bay of Biscay mixed fishery and evaluation of alternative management strategies. [link](#)

*Head of the project:* Stéphanie Mahévas (Ifremer).

## **Working group for the West Med closure areas (EWG 22-01)**

2022

Working group aiming at identifying and evaluating the potential closure areas for the demersal species of the Western Mediterranean Sea.

*Head of the working group:* Cecilia Pinto (University of Genova).

## **ProbyFish project**

2019-2021

European project to identify measures to protect by-catch species in mixed-fisheries management plans.

It provided half of the funds for the PhD.

*Head of the project:* Anna Rindorf (DTU-Aqua).

## **SMAC project**

2019

Project aiming at investigating stock structure of the Eastern English Channel common sole and adapting management to the available knowledge on stock structure.

*Head of the project:* Marie Savina-Rolland (Ifremer).

## **SUPERVISION**

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### **PhD**

> *Subject:* Modeling spatio-temporal distribution and population dynamics of Holothuria in Newfoundland.

Since February 2025

*Student:* Aurèle Hebert Burggraeve.

*Co-supervision with:* Nicolas Bez (HDR), Laurent Dubroca.

> *Subject:* Analyzing and predicting overheating phenomena on urban territories in the context of climate change.

Since November 2024

*Student:* Lenaig Le Grogne.

*Co-supervision with:* Erwan Bocher (HDR), Jeremy Bernard.

### **Short-term contract**

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

January 2023 - June 2024

*CDD employee:* Juliette Casemajor.

*Co-supervision with:* Mathieu Woillez.

### **Master Student**

> *Subject:* A typology of French cities based on urban overheating indicators. [link](#)

May - November 2024

*Student:* Pauline Besnard.

*Co-supervision with:* Erwan Bocher.

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

May - July 2022

*Student:* Théo Fabien.

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

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

February - August 2021

*Student:* Florian Quemper.

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

### **Master Project**

> *Subject:* Identifying fish essential habitat in the Bay of Biscay based on multivariate spatio-temporal decomposition methods.

December 2024 - February 2025

*Students:* Elise Lonchampt, Perrine Dewarumez.

*Co-supervision with:* Francois Husson.

> *Subject:* Investigating the effect of catch reallocation on VMS pings for species distribution model predictions.

December 2020 - February 2021

*Students:* Chloé Tellier, Juliette Theoleyre, Océane Guittion.

*Co-supervision with:* Marie-Pierre Etienne.

## SCIENTIFIC ANIMATION

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### Workshop on spatio-temporal modelling for ecology

Since 2023

with Maxime Olmos (Ifremer). Biannual meeting bringing together ecologists and statisticians to work on spatio-temporal modeling based on ecological applications.

*Host institution:* UMR DECOD.

### Rencontres R 2024

2024

Member of the organizing comity for the Rencontres R conference holding in Vannes. [link](#)

### Space-time seminars

January - June 2023

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

*Host institution:* University of Washington.

### Amédée seminars

2020-2021

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

*Host institution:* UMR DECOD.

## TEACHING

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### Introduction to spatio-temporal modeling for ecology

2021, 2022, 2024

Institut Agro (Rennes), M2.

### Bayesian linear model

2025

University Bretagne Sud, Faculty of Science, M1.

### Sampling and experimental design

2024

IUT Vannes, Data Science department, L2.

### Maximum likelihood estimation

2023, 2024

IUT Vannes, Data Science department, L3.

### Introduction to spatial and spatio-temporal statistics

2023, 2024

IUT Vannes, Data Science department, L3.

### Descriptive statistics

2023, 2024

IUT Vannes, Data Science department, L1.

### Linear model

2023

IUT Vannes, Data Science department, L2.

### Practical work in statistics for marine ecology

2020, 2021

Institut Agro (Rennes), M2.

### Practical work in basics of probability theory

2019

Nantes University, L2.