MINES PARIS | PSL

gstlearn 2030

Roadmap (2025+)

GEOLEARNING
CHAIRE /// Data Science for the Environment

Fondation MINES PARIS

INRAE la science pour la vie, l'humain, la terre

ANDRA Agence nationale pour la gestion des déchets radioactifs

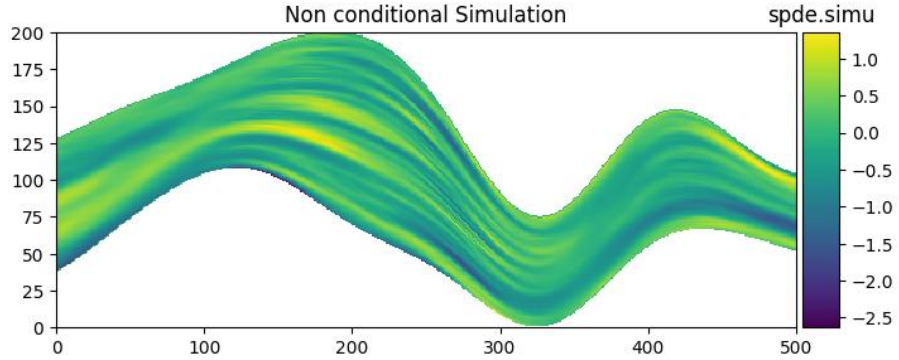
BNP PARIBAS

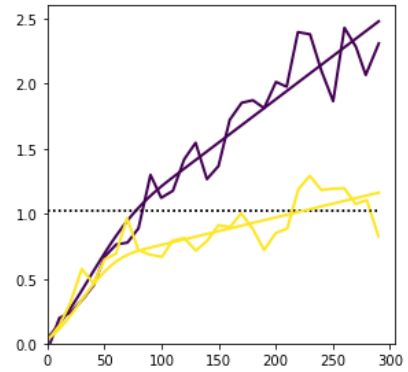
CCR

SCOR FOUNDATION FOR SCIENCE

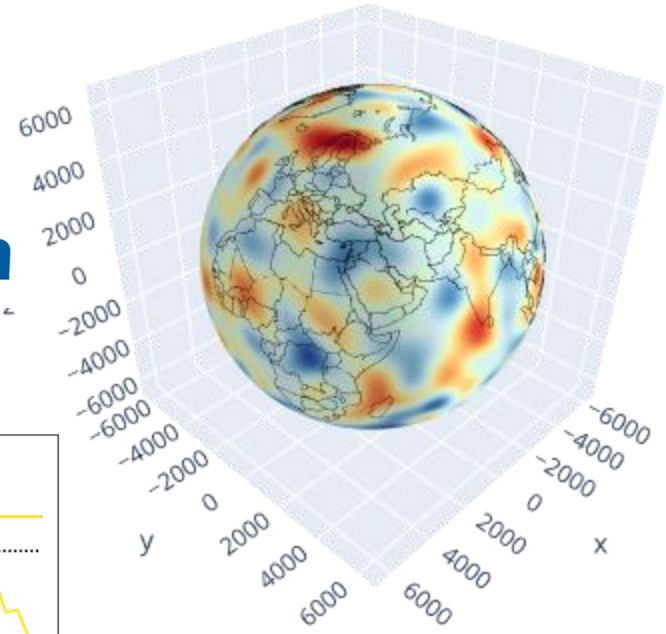
AMBITIONS

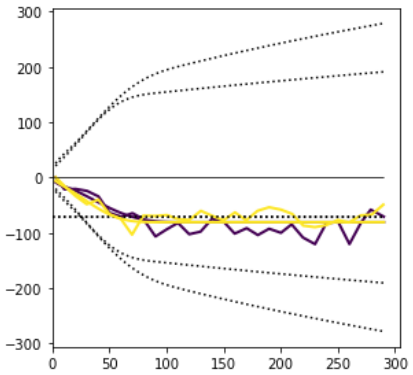
- World Reference for Geostatistical Package (R/Python)
- Most Complete Set of Features for ST Data Analysis
- Our Most Advanced Research Showcase
- Robust and Efficient
- Easy to Use
- Scalable
- Platform Agnostic (Windows, Linux, Mac OS)
- Interoperable with other Packages

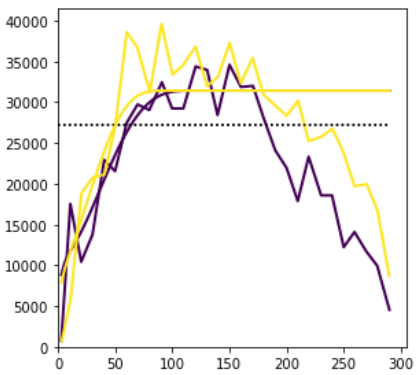




gstlearn







PROJECT ROADMAP

2022:

- Beta version (C++, Python, R) (github repository)
- CI/CD (Continuous Integration / Continuous Deployment)

2023:

- Software Registering at APP
- On-line help (C++ only) & Website (gstlearn.org)
- Distribution Plan & **Open-source** (public repo)

Septembre 2023

Journées de Géostatistique

2024:

- Python New Dependency: Numpy 2
- C++ 17 => C++ 20
- R Package (minigst)
- Mac Portability (Intel / Apple Silicon)

July2024

Geolearning Meeting

2025:

- Multi-Threading
- Governance / Contributing

Avril 2025

Aujourd'hui

Scalability / Optimization / Robustness

MINES PARIS | PSL

PROJECT ROADMAP

Avril 2025

Aujourd'hui

2025:

- Multi-Threading
- Governance / Contributing
- API Improvement / User Guide
- PlayKrige (Marimo)
- Diagnostic Tools (Error Messages, Deprecated Functions)

2026:

- GUI / Plugins (QGis, Paraview, …)
- Publications
- Users meeting #1

Scalability / Optimization / Robustness

FEATURES ROADMAP

Septembre 2023

Journées de Géostatistique

July2024

Geolearning Meeting

Avril 2025

Aujourd'hui

2022:

- Classical Geostatistics (RGeostats Scope)

2023:

- SPDE API / Non-Stationarity
- Neighborhood (Faults, Extension)

2024:

- Optimized Linear Algebra (Eigen)
- Likelihood Maximization / Optimization (Nlopt)
- Non-Proportional Model (Multivariate Mattern)
- Space-Time Model (Covariance Refactoring)

2025:

- Serialization HDF (POC)
- Vecchia Approximation
- Extrema Models
- Study Serialization / Data Streaming
- Heterogeneous database (Alpha numeric, Boolean)

Scalability / Optimization / Robustness

FEATURES ROADMAP

Avril 2025

Aujourd'hui

2025:

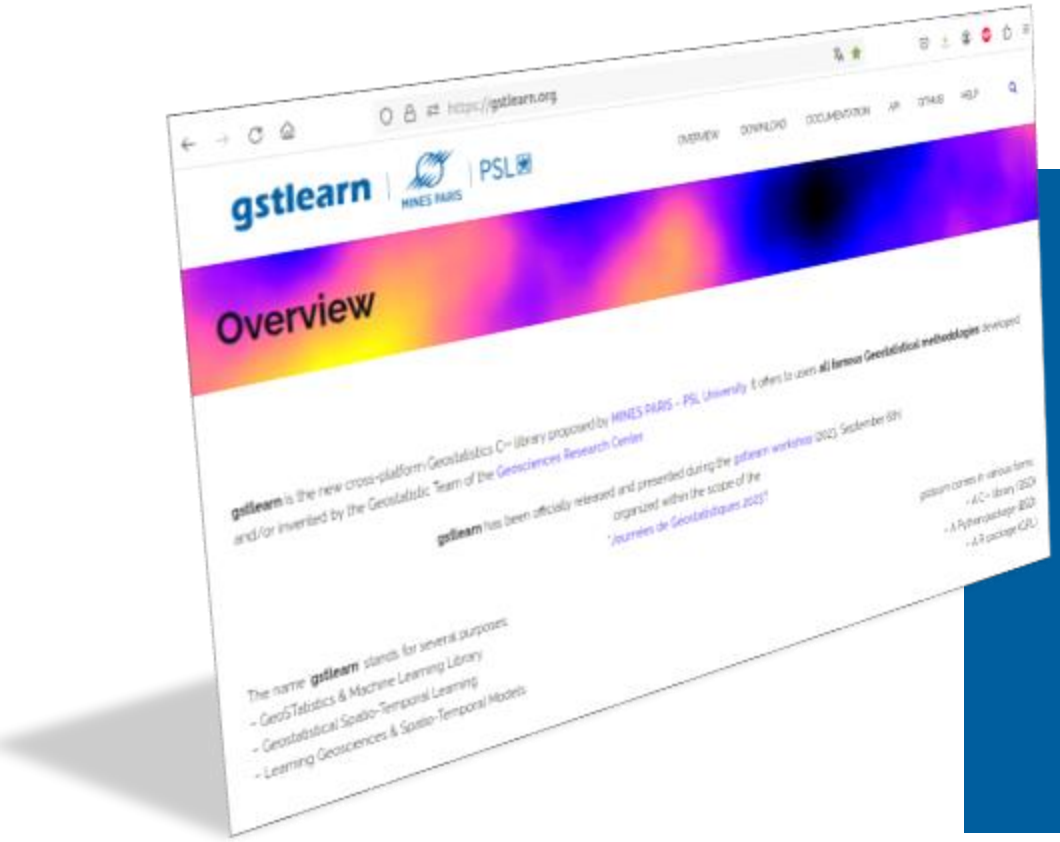
- Serialization HDF (POC)
- Vecchia Approximation
- Extrema Models
- Study Serialization / Data Streaming
- Heterogeneous Database (Alpha numeric, Boolean)

2026:

- Customizable Nested Covariance Model
- Multi-spaces (Lines, Graphs)
- Cloud-ready

Scalability / Optimization / Robustness

SITE WEB & LICENCES



Les URLs autour de gstlearn

https://gstlearn.org

BSD3

https://github.com/gstlearn/gstlearn

GitHub

https://pypi.org/project/gstlearn

https://soft.mines-paristech.fr/cran/gstlearn.html

Pypi CRAN

BSD3 GPL3

https://github.com/mike-pereira/minigst