

GIMAS9AJ STATISTIQUE SPATIALE

GIMAS9AD1 - Master IMSD - Mines Nancy

Statistique spatiale

Crédits : 2 ECTS

Durée : 21 heures

Semestre : S9

Responsable(s) :

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Mots clés :

Data Mining, data science,

Pré requis :

master M1 in mathematics or equivalent (measure theory, probability theory, statistics, stochastic simulation)

Objectif général :

Programmes et contenus :

Description:

Point processes (Poisson, Cox, Gibbs). Markovianity and integrability. Hammersley Clifford theorem. Campbell Mecke theorem. Palm distributions. Exploratory statistics tools. Simulation algorithms (Metropolis-Hastings, Gibbs, CFTP). Bayesian inference. Applications : geosciences, image analysis, astrophysics.

Learning outcomes:

Understanding some of the most known and some of the very recent models for spatial data. Identifying which type of the model may be applied to certain types of situations described by spatial data. Using and building appropriate algorithms to be applied for real data analysis.

Targeted competencies:

Knowing how to chose models and appropriate simulation algorithms adapted to real situations described by spatial data. Being able to implement a mathematical methodology for spatial data analysis, validate and intepret the obtained results.

Compétences :

Niveaux	Description et verbes opérationnels
Connaître	
Comprendre	
Appliquer	
Analyser	
Synthétiser	
Évaluer	

Évaluations :

<input checked="" type="checkbox"/> Test écrit	<input checked="" type="checkbox"/> Contrôle continu	<input type="checkbox"/> Oral, soutenance	<input type="checkbox"/> Projet	<input checked="" type="checkbox"/> Rapport
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