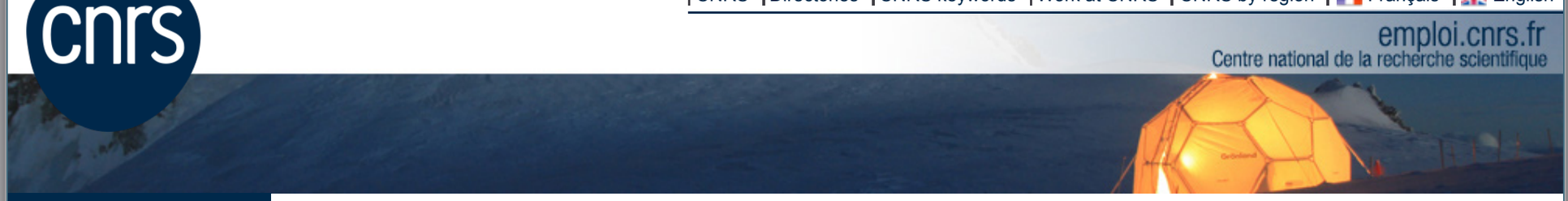

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Postdoctoral Position in Applied Mathematics – Statistical/Stochastic Methods for Robust Optimization of Industrial Workshops (M/F).

This offer is available in the following languages:

Apply Application Deadline : 25 September 2025 23:59:00 Paris time

Ensure that your candidate profile is correct before applying.

General information

Offer title : Postdoctoral Position in Applied Mathematics – Statistical/Stochastic Methods for Robust Optimization of Industrial Workshops (M/F). (H/F)
Reference : UMR6620-VALERIE-018
Number of position : 1
Workplace : AUBIERE
Date of publication : 04 September 2025
Type of Contract : Researcher in FTC
Contract Period : 12 months
Expected date of employment : 3 November 2025
Proportion of work : Full Time
Remuneration : 2991 € monthly salary
Desired level of education : Doctorate
Experience required : Indifferent
Section(s) CN : 41 - Mathematics and mathematical interactions

Missions

The objective of this postdoctoral position, in collaboration with Michelin, is to develop surrogate models capable of rapidly approximating the simulator's results while accounting for uncertainty. Particular attention will be paid to the model's lightness, so that it can be easily used in practice (fast optimization, embedded decision-making, online updating).

Activities

1. Design a lightweight statistical/probabilistic surrogate model, integrating:
• an estimation of the variability and uncertainty of simulated outputs
• an explicit quantification of prediction error
• an interpretable and controllable structure (e.g., Gaussian processes, …)
2. Model industrial system uncertainties (delays, resources, failures) using various methods, including Bayesian approaches.
3. Optimize the workshop configuration, taking into account scenario variability, by relying on the surrogate model to accelerate exploration.
4. Analyze the impact of local decisions (scheduling, resource allocation, layout) on overall performance through simulations and probabilistic sensitivity analyses.
5. Formulate robust and understandable recommendations to support decision-making in real industrial contexts.

Skills

• PhD in Applied Mathematics, Data Science, or Statistics
• Expertise in Bayesian statistics, stochastic modeling, and optimization under uncertainty
• Proficiency in Python programming
• Strong interest in applied and transferable research
• Knowledge of industrial simulation and optimization would be an asset

Work Context

Postdoctoral researcher within a Joint Research Unit (UMR6620 – CNRS/UCA), based in the Clermont-Ferrand area (63178 Aubière). The position is assigned to the Probabilities, Analysis and Statistics (PAS) research team.

Constraints and risks

Respect for data confidentiality.