Call for Application – Doctoral Contract (2025–2028)

Title	Modeling and simulation of urban transport electrification through digital twins: Application to the Bourgogne Franche-Comté region
Description	The energy transition necessitates a rapid electrification of urban transport systems. This PhD aims to design and experiment with an innovative digital modeling of electrified transport networks, leveraging digital twin technologies. The project fits within a large-scale prospective simulation perspective, using 3D spatial data, territorial indicators, and multi-agent or geosimulation approaches. The objective is to propose operational electrification scenarios adapted to the territories of the Bourgogne Franche-Comté region.
General information	Laboratory: ThéMA (UMR 6049 – CNRS / Marie & Louis Pasteur University) Locations: Besançon / Belfort, France Start date: October 2025 Duration: 36 months (doctoral contract) Workload: Full time Salary: According to current regulations.
Working context	The thesis is part of the SATURN project (Simulation and Analysis of Urban Transport Electrification via Digital Twins), selected under the TRANSBIO 2025 call for projects. It draws on the expertise of the ThéMA, FEMTO-ST, and CRESE laboratories. The project is multidisciplinary (urban planning, spatial planning, quantitative geography, computational sciences) and is embedded in a dynamic of scientific, territorial, and industrial development. It involves several academic and potentially industrial partners.
Expected outcomes	- Development of a territorial digital twin to simulate the electrification of urban mobility. - Creation of dynamic, spatialized scenarios integrating energy, infrastructure, and social constraints. - Production of a reproducible methodological framework applicable to other French or European regions. - Dissemination of results through scientific communications, publications, and collaborations with public and private stakeholders.
Desired profile	- Master's degree (or equivalent) in Theoretical and quantitative geography, Urban planning, or Spatial planning with an interest in computational approaches. Expected skills: - Knowledge of spatial modeling and simulation tools - Ability to handle 3D spatial data - Ability to read and write code in Python or Swift appreciated - Strong writing and synthesis skills - Interest in interdisciplinary teamwork
Languages	- French: fluent - English: intermediate level desired
Application	Please send the following by email to igor.agbossou@univ-fcomte.fr by **September 15, 2025** - Detailed CV - Motivation letter (max 2 pages) - Transcripts from M1 and M2 - Master's thesis or internship report (if available) - Letters of recommendation