



ID de Contribution: 74

Type: **Stage de M2 (5mois)**

Solving canonical PDEs using the mimetic finite difference method

jeudi 2 juillet 2026 10:30 (20 minutes)

ETUDIANT 4: MAEL TORAMO

This research project focuses on the numerical modelling and simulation of transport phenomena using the mimetic finite difference (MFD) method, a relatively recent approach designed to preserve the fundamental geometric and physical properties of differential operators at the discrete level. Unlike classical finite difference or finite element methods, MFD schemes aim to “mimic” the integral identities of vector calculus—such as divergence, gradient, and curl—ensuring that conservation laws and symmetries remain valid after discretization. The student will investigate how canonical partial differential equations governing transport phenomena (e.g., diffusion, advection, and Poisson-type equations) can be discretized using MFD on general, possibly non-orthogonal or unstructured meshes.

Master

Mécanique

Laboratoire d'accueil

LMFA

Composante ou Département Composante

MECA

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