

Abderrahman M'jikou

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Engineer graduated from ENSEIRB-MATMECA specialized in mathematical modeling and numerical simulation.

Expertise: Fluids and Energy, numerical modeling, CFD.



Education and Degrees

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| Institut de mécanique et d'ingénierie | Bordeaux, France |
| ○ <i>PhD Student, Thesis: "Modélisation multiéchelle de la pyrolyse"</i> | <i>October 2024 – Present</i> |
| ENSEIRB-MATMECA – Bordeaux INP | Bordeaux, France |
| ○ <i>Engineering Degree in Mathematics and Mechanics, Fluids and Energy</i> | <i>2021 – 2024</i> |
| - Numerical modeling and simulation: Finite differences, Finite volumes, Finite elements, Monte Carlo. | |
| - Fluid mechanics, Free-surface flows, Heat transfer phenomena, Turbulent flows. | |
| - Strength of materials, Mechanics of deformable solids, Dynamics of mechanical structures. | |
| Scientific Preparatory Classes | Beni Mellal, Morocco |
| ○ <i>Preparatory Classes for Grandes Écoles (MPSI-MP)</i> | <i>2019 – 2021</i> |

Academic Experience

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| Optimization of RPB Geometry using CFD Simulations | |
| ○ <i>Industrial Project with IFP Energies Nouvelles</i> | <i>October 2023 – February 2024</i> |
| - 3D single-phase simulations using Ansys Fluent/OpenFoam. | |
| - Optimization of the RPB geometry. | |
| Modeling of the Reactive Infiltration Process of Molten Silicon | |
| ○ <i>Computing Project</i> | <i>September 2022 – May 2023</i> |
| - Modeling in Fortran 90 (finite volumes, heat equation). | |
| - Theoretical model. | |

Professional Experience

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|---|-----------------------------------|
| Modeling of hypersonic flow under thermo-chemical non-equilibrium | |
| ○ <i>Final Year Internship at University of Illinois at Urbana-Champaign</i> | <i>March 2024 – Sep 2024</i> |
| - Modeling high-speed flows and thermal protection materials. | |
| - Simulating gas-surface interactions in hypersonic flight and plasma wind tunnels. | |
| - Comparing PATO ablation simulations with experimental data. | |
| Calculation of Permeability of Porous Media from Micro-tomography | |
| ○ <i>Applied Internship at I2M</i> | <i>June 2023 – September 2023</i> |
| - Segmentation of composite material micro-tomographies using <i>DragonFly ORS</i> . | |
| - Comparison between two different numerical methods on <i>OpenFoam</i> . | |
| - Determination of the permeability of a composite material before and after pyrolysis. | |

Skills

- **Computing**
 - *Programming Languages:* Fortran 90, Python, Matlab, C++, LaTeX.
 - *Software:* OpenFoam, Fluent, Abaqus, ParaView, DragonFly ORS.
- **Languages:** English (TOEIC C1-985/990), Spanish (beginner), Arabic (native), French (fluent in reading, speaking, and writing).

Interests

- **Sports:** Weightlifting, fitness.
- **Hobbies:** Traveling, member of the logistics team at the International Office of ENSEIRB-MATMECA.