

# CARLOS D. MORA MORENO

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Delivering new energy technologies in benefit of the society is my talent.

Passionate about the energy transition, with experience in innovative energy carriers and converters across various scales, from research devices to household appliances. Focused on the human aspect in technical projects, with a strong interest in European policy, regulations, and standardization. Seeking to further enhance skills in project management, business development, and policy dynamics.

Expertise	Mathematical Modeling and Data Science, Energy Technology, Project and Stakeholder Management
Values	Curiosity, Innovation, Pursue of Excellence, Responsibility, Confidence, Team Spirit
Competencies	Analytical Mind, Attention to Detail, Creativity, Leadership, Multi-level Communication

## EXPERIENCE

2023 - Present	<b>Data Scientist</b> BDR Thermea & Remeha <ul style="list-style-type: none"><li>• <b>Main responsibility:</b> R&amp;D of Energy Management solutions.</li><li>• <b>Skills / duties:</b><ul style="list-style-type: none"><li>◦ Data analysis and visualization</li><li>◦ Project planning and execution</li><li>◦ Collaboration with academia</li><li>◦ Policy development</li><li>◦ Product strategy development</li><li>◦ Explore the feasibility of use cases</li><li>◦ Field trial launching</li></ul></li></ul>
2022 - 2023	<b>Simulation and Modeling Engineer</b> BDR Thermea & Remeha <ul style="list-style-type: none"><li>• <b>Main responsibility:</b> Development of numerical models of hydronic components for automated testing.</li><li>• <b>Skills / duties:</b><ul style="list-style-type: none"><li>◦ Agile / Scrum methodologies</li><li>◦ Project planning and execution</li><li>◦ Stakeholder Management</li><li>◦ Product strategy development</li><li>◦ Quality control of software products</li><li>◦ Automated testing</li><li>◦ Mathematical model validation</li></ul></li></ul>

2017 - 2022

## Graduate Research Fellow at Eindhoven University of Technology

- **Subject of the Project:** Development of advanced predictive models and algorithms aimed at mitigating turbulent heat transport in fusion plasma experiments
- **Skills acquired:**
  - *High-Performance Computing* Large-scale simulations and optimization
  - *Data Engineering & Visualization* Data pipelines and impactful visualizations
  - *Predictive Modeling* Accurate and reliable model development
  - *Project Management* Coordinated international research collaborations
  - *Scientific Training* Research, integrity, writing, and communication
  - *Mentorship* Guided M.Sc. students through successful final projects

2017

## Research Associate at UK Atomic Energy Authority

- **Main project:** Develop experimental scenarios to test the capabilities of a new magnetic coil configuration of a fusion plasma reactor
- **Skills / duties:**
  - Solve 2-D magnetic equilibrium equations using a dedicated MATLAB package
  - Calculate magnetic coil interaction matrices
  - Devise the transitions between magnetic equilibria
  - Determine the viability of experimental scenarios
- Experiments ran successfully during device commissioning

2015 - 2016

## Diagnostics Engineer at TAE technologies and spin-off Plasmatech

- **Main project:** Characterization of impurity losses in a linear plasma device using Doppler spectroscopy
- **Skills / duties:**
  - Hands-on maintenance of experimental setup
  - Development of data acquisition routines
  - Support to lead scientists during experimental campaigns
  - Involvement in discussion of physical results
  - Experience in a multi-physics, engineering and industrial environment
- Bachelor's thesis written on this topic

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## EDUCATION

2016 - 2017

## Master of Science (with distinction) in Fusion Energy

*University of York · UK Atomic Energy Authority*

- Specialization program to address the current energy demand with an innovative solution: Nuclear Fusion
- Focus on theoretical plasma physics and HPC computing
- One-year program with focus on research experience
- Awarded a scholarship from the Mexican Science and Technology Council

2014

## International exchange experience

*Universitat Autònoma de Barcelona*

- Six months exchange program
- Courses followed:
  - Particle Physics, Business Organization and Management, Entrepreneurship

2009 - 2012

## Bachelor of Engineering Physics

*Universidad Autónoma Metropolitana - Azcapotzalco*

- Assistant at the local plasma laboratory
- International exchange scholarship
- End-project scholarship

## SKILLS

### Languages

Spanish	★★★★★
English	★★★★★
Dutch	★★★★☆
Italian	★★★★☆

### Computer

- **Linux** · Preferred operating system (Suse)
- **Vim** · Preferred editor
- **LaTeX** · Publication-quality documents
- **Bash, Make, ...** · Daily scripting and development
- **Git** · For version control of virtually everything
- **html, CSS** · Used for this curriculum vitae (with markdown → Pandoc)
- **Microsoft 365** · Where useful

### Team

### Collaboration

- **Jira** · Project tracking software
- **Miro** · Creative collaborative workspaces
- **Azure DevOps** · Software development
- **Azure ML** · AI development environment

### Programming

- **Python** · Numpy, scipy, pandas, matplotlib, cython
- **Jupyter** · Lab and notebooks. Used for daily data analysis
- **Mathematica** · Used for symbolic computing
- **C++** · Limited experience, used for side projects
- **Fortran** · HPC applications such as **GENE**
- **Bash, Make** · Experience with linux scripting and development

## PERSONAL

### Nationality

Dutch, Mexican

### Date of birth

20 September 1990

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