

Thunderstorm electrification and high energy radiation

The main objective of this project is to investigate how thunderstorm electrification influences the production of atmospheric high-energy emissions.

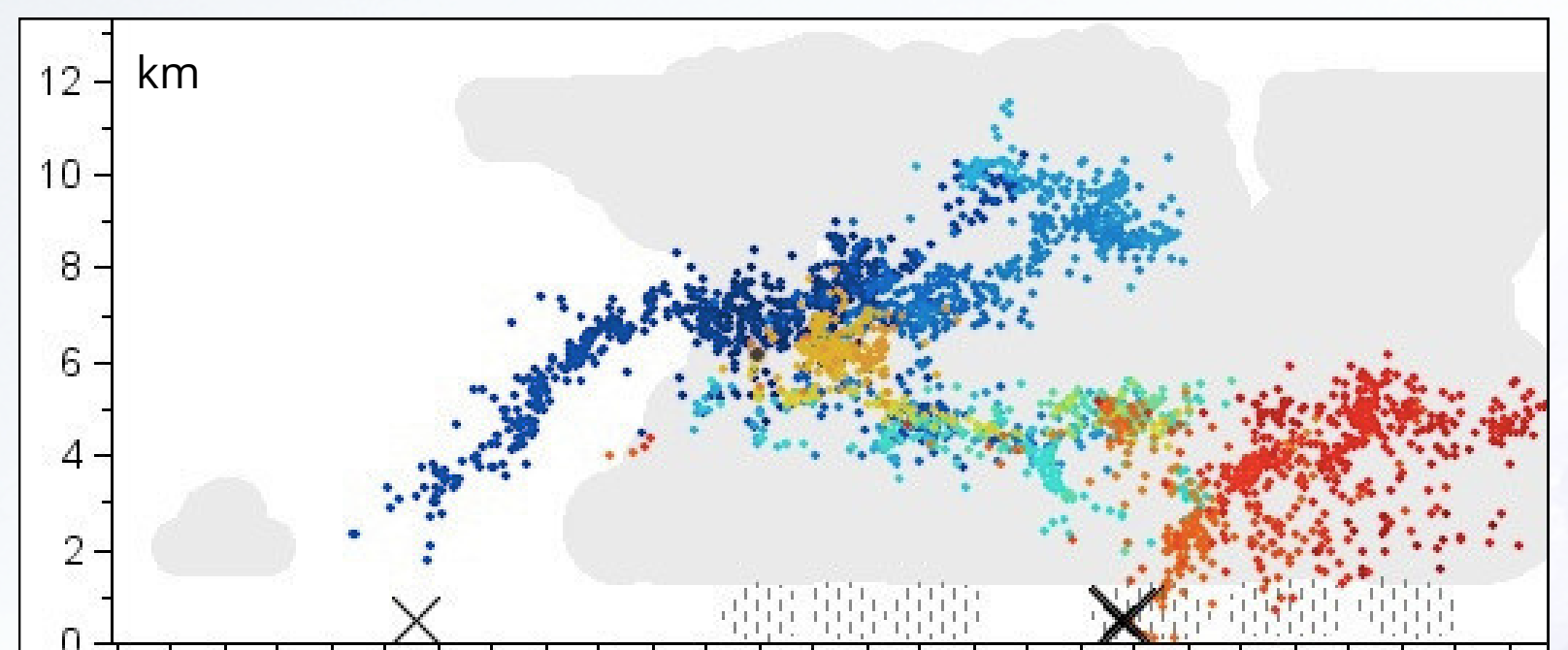
The candidate will model lightning leaders depending on realistic thunderstorm charge environment derived from UPC's Lightning Mapping Arrays data including data obtained during the ENLIGHTEN aircraft campaign.

This doctoral position is part of GRAIL ("Gamma Radiation from the Atmosphere for Investigation and Learning"), a prestigious Horizon Europe Marie-Sklodowska-Curie Action Doctoral Network (MSCA-DN): <https://grail.physik.tu-dortmund.de/>

The objective of GRAIL is to study high-energy phenomena emitted from thunderstorms as well as their effect on nature and technology.

The **UPC-Lightning Research Group** (lrg.upc.edu elma.upc.edu) started in 2001 to investigate on Atmospheric Electricity. Our interests include thundercloud electrification, lightning physics, lightning mapping from ground and space, severe thunderstorms; lightning-ignited wildfires; and lightning protection for wind turbines and aircraft.

Example of VHF mapping of a lightning flash



Requirements

- Strong academic qualification with an internationally recognized degree at **Masters** level in **Physics including Meteorology, Electrical Engineering, Aeronautics or Aerospace Engineering, Mathematics, Radio Science, Computer Science, or any related field.**
- Fulfill the MSCA-DN 12-month rule.

We are looking for:

- In-depth knowledge of electromagnetics.
- Experience in numerical modelling.
- Experience in C/C++, Matlab and/or relevant tools in the field.
- Experience that demonstrates your team-oriented, independent, innovative, and strategic working skills.
- Fluency in English, both written and spoken.

We offer

- Competitive salaries (plus allowances) and funding for technical and personal skills training and participation in international research events.
- A stimulating work environment where you will be in close contact with other researchers and industry.
- You will participate in international secondments to other organizations in the network (TU Dortmund University (DE), Duke University-USA and DENA-Spain) and in outreach activities with audiences beyond the research community.
- You will be employed by UPC for a total of 36 months.

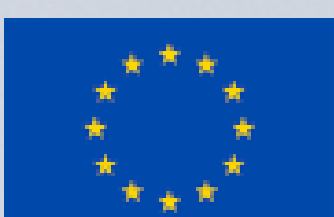
Where to apply

<https://euraxess.ec.europa.eu/jobs/422015>

Direct link to form: <https://forms.gle/xBV76bhre8dGGE2C6>

Deadline: May, 24th, 2026, 11:59 p.m.

Contact: joan.montanya@upc.edu



Marie
Sklodowska-Curie
Actions



Work location

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