

Expression of Interest-UPM Supervisor

Marie Skłodowska Curie Action–Postdoctoral Fellowship 2026 (MSCA-PF-2026)

Supervisor Name	Gonzalo Felipe García Fernández	
Email	gf.garcia@upm.es	
Department /Institute / Centre Name/Location	Energy Engineering, Nuclear Area / Faculty of Industrial Engineers (Madrid, Spain)	
Research Area	Information Science and Engineering (ENG)	Life Sciences (LIF) Physics (PHY)
Research team/group	<p>The AMTN-UPM research group, integrated within the Fission Reactor Advanced Technologies Group (TARF), belongs to the Nuclear Engineering Area of the Department of Energy Engineering at Universidad Politécnica de Madrid (UPM). The department includes academic staff from ETSII, ETSIME and ETSIN. The group has extensive experience in the study and characterization of secondary radiation fields in both medical and nuclear facilities. AMTN-UPM operates a neutron measurement laboratory equipped with AmBe neutron sources, Bonner sphere spectrometry systems, neutron and gamma detectors, irradiation devices (Howitzer and FANT), radioactive calibration sources, and Monte Carlo radiation transport codes (MCNP and PHITS). This infrastructure enables the experimental characterization of radiation fields and their validation through advanced Monte Carlo simulations</p> <p>https://www.upm.es/recursosidi/map/ciencia-y-tecnologia-de-sistemas-avanzados-de-fision-nuclear/</p>	
Keywords	Neutron Dosimetry, Out-of-Field Dose, Proton Therapy, Computational Phantoms, Monte Carlo codes	
Research Focus	<p>FANTOM-MC: Field-Adjacent aNd ouT-Of-field dose estimation using Monte Carlo methods</p> <p>The host group welcomes postdoctoral researchers interested in advancing computational and experimental methods for radiation dosimetry in modern radiotherapy. The research focuses on the development of innovative approaches to estimate radiation dose distributions beyond the treatment field in photon and proton therapy. The work will combine Monte Carlo particle transport simulations, advanced computational modelling, and medical imaging data to improve the understanding of radiation exposure in healthy tissues. Particular emphasis will be placed on the integration of digital anatomical models, artificial intelligence tools for image processing, and radiobiological modelling for long-term risk assessment. The research aims to contribute to improved clinical decision support between radiotherapy modalities, supporting safer and more personalized cancer treatments.</p>	
Applications: documents to be submitted and deadlines	<p>Interested candidates should send the following documents to the supervisor:</p> <ul style="list-style-type: none"> - Curriculum Vitae (including list of publications, max. 10 pages) - Motivation (max. 1 page) - Letter of recommendation from academic/research person (2 letters with contact details) - Short research idea aligned with the proposed research focus (2 pages) <p>Deadline: 4/5/2026</p>	