

CALL FOR APPLICATIONS: DELTA-HUB PROJECT

POSITION OPEN – APPLICATIONS REVIEWED ON A ROLLING BASIS

Postdoctoral Researcher in Global Delta Dynamics from Satellite Observations

Danube Delta, Romania | 2-Year Contracts | Start Date Flexible

THE SCIENCE

River deltas are home to hundreds of millions of people and are among the environments most exposed to sea-level rise, sediment starvation, and human pressure. Yet we still lack a globally consistent picture of how deltas actually work: how water is routed and stored across their channel networks, how they flood and drain, and how water and sediment are exchanged between rivers, plains, and coasts.

A new generation of satellite missions is changing what is observable. SWOT delivers two-dimensional water surface elevations at unprecedented resolution; NISAR will map surface change and inundation at high revisit; and these can be fused with altimetry (e.g. ICESat-2, Sentinel-3/6), multispectral time series (Sentinel-2, Landsat), and machine-learning approaches, including emerging geospatial foundation models. Deltas are still nearly virgin territory for these datasets, and the first wave of studies will define the field.

We are looking for a researcher to lead this effort within DELTA-Hub. You will **shape your own research line** within the broad scope of satellite-based delta science from developing new data products to global comparative analyses across the world's deltas.



WHAT YOU COULD WORK ON

- Global-scale analysis of delta hydrodynamics and morphodynamics using new satellite-derived products from SWOT and NISAR, notably water slopes, water level variability, connectivity, and inundation dynamics, and fusion of altimetry, SAR, and multispectral time series to track flooding patterns and sediment-water interactions.
- Machine-learning approaches for classification, retrieval, and pattern discovery in large Earth observation datasets, including geospatial foundation models
- Connecting satellite observations with our numerical models and in-situ measurements in the Danube Delta.

These are directions and we expect the strongest candidates to bring their own ideas.

WHO WE ARE LOOKING FOR

- PhD in Earth Sciences, Remote Sensing, Hydrology, Geodesy, Physical Geography, Oceanography, Data Science, or a related field
- Strong programming skills in Python, with experience handling large geospatial datasets
- Genuine curiosity about deltaic and coastal systems and their global significance

Any of the following is a plus: experience with radar altimetry, SAR/InSAR, or SWOT data; machine learning applied to Earth observation; cloud geospatial platforms (Google Earth Engine, Pangeo); hydrodynamic modelling; GIS analysis.

We care more about your ability to ask good questions of large datasets than about your disciplinary label. If you don't meet every criterion but believe you are a strong fit, we would still like to hear from you.

WHY THIS POSITION

- **Direct collaboration with NASA JPL:** the position involves active joint work with the SWOT science team at the Jet Propulsion Laboratory, with the opportunity for a research stay
- **First-mover advantage:** SWOT and NISAR over deltas are a fast-moving, data-rich niche with strong potential for first-author publications in leading journals
- **An international network:** the DELTA-Hub International Advisory Board includes TU Delft, Deltares, Tyndall Centre, Wageningen University, University of Bordeaux, University of Pisa, Polytechnic University of Catalonia, North Carolina State University, IFREMER, and Tour du Valat, with funded visits to partner institutions

- **Career development:** co-supervision experience, summer schools, and active support for your own fellowship applications (e.g. MSCA) as part of building your independent profile
- **A growing centre:** DELTA-Hub is an ERA Chair project establishing a leading delta-science centre at the University of Bucharest. You will work closely with Florin Tătui and Florin Zăinescu, alongside ERA Chair Prof. Edward Anthony, a leading figure in global delta research.

WHAT WE OFFER

- **A competitive salary:** €4000/month (gross)
- **Conference travel:** budget for international conferences and workshops
- **Fieldwork:** optional participation in field campaigns in the Danube Delta, with full logistical support
- **Research infrastructure:** Access to high-performance computer facilities, modelling software licenses, vessels, and field monitoring equipment
- **Location:** based at the University of Bucharest, with access to our research station at Sfântu Gheorghe, where the Danube meets the Black Sea. Few places offer this kind of direct contact with an active delta system. The working language is English.

HOW TO APPLY

Send your application to delta.hub@geo.unibuc.ro with:

- CV (including publication list)
- Brief motivation letter (1 page max tell us what you would do with these datasets)
- Contact details of 2 referees

Applications are reviewed as they arrive, until the position is filled. Expected start: as soon as possible; the start date is flexible for the right candidate.

We encourage applications from candidates of all backgrounds. If you have questions about the position or the project, feel free to reach out.

DELTA-Hub is funded by the European Union's Horizon Europe programme. The project aims to establish a leading research centre for delta science at the University of Bucharest, addressing the sustainability challenges facing deltaic environments worldwide.

<https://delta-hub.unibuc.ro/>