**Researcher in geophysics**

Company description

*Presentation*

Geolinks is a start-up in Geosciences specialized in subsurface monitoring and committed to the fight against global warming.

GeoLinks was cofounded in 2020 with the strong conviction that delivering cost effective underground geophysical monitoring solutions for industrial operators is key for a safe and sustainable use of the underground.

‍The large scale deployment of Underground Energy Storage and Carbon Capture and Storage (CCS) is mandatory to achieve the objectives of limiting global warming under the 1.5°C.

Since 2020, in partnership with the CNRS, GeoLinks develops an innovative geophysical monitoring solution that will accelerate the large scale deployment of the CO2 geological storage as well as hydrogen storage, which is essential to reach the carbon neutral objective in 2050.

*Our value & culture*

In GeoLinks we believe in People, we believe in Geoscience, and in collaborative R&D.

Because the necessity is the mother of invention, at GeoLinks we always start from the need and we don’t reinvent the wheel.

**Context:**

Using a patent from the CNRS, which describes one specific analysis of seismic waveforms reconstructed through ambient noise interferometric processes, we are developing new monitoring solutions for tracking fluid movements in the subsurface for industrial applications.

The use of seismic timelapse attributes to understand the change in the subsurface is an ever-evolving field, that has potential application in numerous domains, such as underground gas storage, CO2 geological storage, geothermal fields, H2 exploration, hydrogeology etc.

We have launched in 2021 our first demonstrator project for the monitoring of one geological gas storage site. Our second development project, launched in early 2022, uses the same approach but in another context of shallow gas seep.

With the objective of better constrain the sensitivity of the seismic monitoring tools we develop, GeoLinks has recently entered the Seiscope consortium, thus gaining access to one of the most performant 3D seismic propagation modelling codes available.

We are now looking for an experienced researcher in seismic modelling and/or passive seismic interferometry to undertake seismic simulation work as well as participate to future developments within our R&D team.

**Main missions:**

The researcher will undertake modelling and simulation work of seismic wavefields using existing codes developed by the SEISCOPE consortium. During the first year, the research work will consist of achieving the following steps:

1. Mastering the elastic modelling capabilities of the Seiscope code including mesh generation, model design and simulation of the complete wavefield for a given source distribution. The work will first be carried out on simple media (e.g. tabular 1D), and afterwards on media of increasing complexity (2D, and later on 3D).
2. Developing tools that will allow interfacing and transfer of information between the Seiscope modelling tools output and the python-based analysis tools developed at GeoLinks.
3. Participate to the development of an adapted formalism to simulate seismic wave propagation on 3D media with changing properties (attenuation, seismic velocities etc..), with respect to the different industrial case (gas storage, hydrogeology etc…) .

**Secondary mission:**

The researcher might also contribute to the development of specific data processing tools as well as real data analysis of pilot projects.

**Profile**

* Organized and self-reliant
* PhD in a field of geophysics or signal processing or acoustics
* Area of expertise: propagation of wave fields or/and interferometric processes
* Appetite for research applied to industrial issues
* Autonomous programming, mostly Fortran & Python, Matlab also useful
* Experience with simulation codes is an advantage
* Fluent English (read, written, spoken)

**Required Additional information:**

* Office location, Massy Ile-De-France – working from home / teleworking can be considered if the candidate does not want to relocate
* Start: April 2022
* Contract type: CDI
* Salary: 36-40k€ annual

For applying, please send your CV and application letter to:

[contact@geolinkservice.com](mailto:contact@geolinkservice.com)

or through the PhDTalent website: <https://app.phdtalent.fr/job_offers/researcher-in-geophysics_1030/details>