



CAHIER DES CHARGES

1. Actualisation

Établi le	20/03/2024	Par	Pietro de Anna and Beatriz Quintal	Remplace la version du	jj.mm.20xx
Motif d'actualisation		Nouveau poste		Taux d'activité	100%

2. Identification du poste

Direction / Faculté	FGSE	Département/Service/ Institut/Section	ISTE
N° de poste		Intitulé du poste dans l'entité	Laboratory technician
N° de validation SRH	0224015	Libellé emploi type - n°	Scientifique de laboratoire - 458
Chaîne	236	Niveau	09

3. Descriptif et missions générales du poste

3.1 But du poste

The objective of the position is to participate in the scientific activities of the Environmental Fluid Mechanics Laboratory (EFM) and the Rock Physics Laboratory (RP). As such, the person occupying the position ensures the configuration of machines specific to the field. The person gives a practical support in the usage of equipments and supports users in their research by advising them on the feasibility of experiments based on the possibilities offered by the machines.

3.2 Missions générales

1.	Prepare and execute experiments to support laboratory activities
2.	Support and training of laboratory users
3.	Contribute to administrative laboratory management
4.	Equipment maintenance
5.	Involvement in the research planning of PIs

4. Conduite : ETP directement subordonné-s

Cf. Organigramme

Non

Oui

5. Mode de remplacement prévu, en cas d'absence du titulaire

Non

Oui

6. Missions et activités		Temps moyen en %
1. Prepare and execute experiments to support laboratory activities		40%
EFM : Microfluidics master and chip fabrication (also in clean room)		
EFM : Microbial samples (solid or liquid) growth and their stocks		
EFM : Configuration of flow systems (pumps, pressure controllers) combined with automated time-lapse optical microscopy and some experiment execution		
RP : Preparation and execution of some experiments using a triaxial press to measure seismic attenuation (using forced oscillations), poroelastic constants, and ultrasonic velocities in fluid-saturated rock samples under different pressures (confining and axial stresses, fluid pressure), within a broad range of frequencies, and under a range of temperatures		
RP : Developing, modifying, testing and calibrating setups for measuring seismic attenuation, poroelastic constants, and ultrasonic velocities in fluid-saturated rock samples, taking into account: i) pore fluid system, pumps and dead volumes; ii) confining and axial stresses; iii) range of temperatures from -20C to +100C; iv) high precision sensors; v) broad range of frequencies		
2. Support and training of laboratory users		30%
EFM and RP : Provide practical support to laboratory users		
EFM and RP : Train new users to the usage of laboratory equipment and experimental setups		
3. Contribute to administrative laboratory management		10%
EFM and RP : Purchase of consumables and management of corresponding stocks; eventual organization of schedule for equipment usage		
4. Equipment maintenance		10%

EFM : Ensure the functioning and regular maintenance of the automated optical microscopy system, including: i) verification of operating conditions, ii) calibration of optical configuration, iii) software updates, iv) management of maintenance/repair from manufacturer	
EFM : Ensure the functioning and regular maintenance of the microfluidics fabrication facility, including: i) UV irradiation system, ii) vacuum pumps, iii) plasma cleaner, iv) management of maintenance/repair from manufacturer	
RP : Ensure the functioning and regular maintenance of the triaxial press, including: i) pressure vessel and pumps; ii) electrical wiring for different sensors/measurements; iii) sensors; iv) sample preparation tools (e.g. for coring, cutting and rectifying samples; for gluing and welding strain gages on the samples)	
RP : Ensure the functioning and regular maintenance of the forced oscillation set-up, including: i) High voltage amplifier and piezo-stack; ii) high resolution sensors; iii) oscillating pumps and fluid exchange cylinders; iv) data recording and treatment	

5. Participation in the laboratories weekly meetings	10%
EFM and RP : Participation and active contribution to weekly group meetings	
EFM and RP : Participation to weekly individual meetings with PI and students to discuss experiments feasibility	

7. Éventuelles responsabilités particulières attribuées au titulaire

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8. Exigences requises

8.1 Formation de base

Titre	
MSc degree in physics, geophysics, geology, mechanical engineering or equivalent, with focus on i) experimental fluid mechanics or ii) experimental rock physics, or equivalent training and experiences	<input checked="" type="checkbox"/> Exigé <input type="checkbox"/> Souhaité

8.2 Formation complémentaire

Titre	
	<input type="checkbox"/> Exigé <input type="checkbox"/> Souhaité

8.3 Expériences professionnelles

Domaine	Nombre d'années

Engineering or geosciences experience preferably in microfluidics (use and fabrication) or experimental rock deformation (particular focus on forced oscillations to measure attenuation in fluid-saturated rock)	2-3 years (could be acquired during education)
8.4 Connaissances et capacités particulières	
Domaine	
Basic knowledge on computer programming	<input checked="" type="checkbox"/> Exigé <input type="checkbox"/> Souhaité
Interpersonal skills, ability to work as a team, cooperation with users	<input checked="" type="checkbox"/> Exigé <input type="checkbox"/> Souhaité
Planning and organisational skills, ability to work independently	<input checked="" type="checkbox"/> Exigé <input type="checkbox"/> Souhaité
Excellent knowledge of English, written and oral Good knowledge of French, oral	<input checked="" type="checkbox"/> Exigé <input type="checkbox"/> Souhaité

9. Astreintes particulières (travail de nuit, service de piquet, etc...)

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10. Signatures

Le/la titulaire atteste avoir pris connaissance du présent cahier des charges.

Date :	Nom et prénom :	Signature :
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Le/la supérieur/e hiérarchique.

Date :	Nom et prénom :	Signature :
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Le/la représentant/e de l'autorité d'engagement. (décanat, chef-fe de service ou direction).

Date :	Nom et prénom :	Signature :
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