



PHD PROPOSAL

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STRESS DISTRIBUTION ON A GAS PIPE BURIED INTO A SOIL

This PhD thesis will be conducted with GRT Gaz, the French company in charge of gas transportation.

The aim of this project is to better understand the stress distribution on a gas pipe buried into a soil as well as the stress distribution around the pipe. Different load configurations will be assumed (load in the soil surface, installation of a concrete diffusion slab, ...).

The project will consist in two main tasks:

- Physical modelling experiments using the VisuCuve apparatus in 3SR to represent the problem at a small scale (see the figure below). The experiments must follow the similitude conditions, already established during a previous Master project.



- FEM computations will be performed to investigate the effect of the boundary conditions first, then more extensively investigate the behaviour of a gas pipe into a soil which behavior will be represented assuming different constitutive models.

Location : 3SR, Grenoble (some weeks at GRT Gaz in Paris are planned)

Gross salary : \approx 2000 € / month

Start : October, 2019

Required documents : CV, master grades, motivation letter

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