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Research field
Pressure loss, hydraulics

Subject title
Measuring pressure loss for the flow of clay slurries

Project proposal

Introduction
To design pipeline transport systems to carry slurries, knowledge of the pressure loss must be known. This knowledge of pressure drop will be used to specify the pipe diameter and aid in choosing the appropriate pump.

Experimental description

The beta-loop is a 200 m pipeline (similar to the figure below), that has two sections, a horizontal and an inclined one. It has a slurry tank that contains 4000 l of clay slurry and equipped with a variable speed pump. There are flow and pressure sensors at various locations. The objective is to study how the pressure in the pipeline changes with respect to change in the slurry flow speed and change in concentration of the slurry.

Requirement

This project will require:

1. Basic knowledge in Fluid Mechanics
2. Good laboratory skills

Fig. 1: pipeline test rig  Fig. 2: some of the measurement sensors