

Data Study Group - Shell's Statistics & Chemometrics group

In the oil and gas industry we often face the problem of monitoring what our wells are producing, in terms of both the total flow rate and the ratios of oil, water and gas. Current measurement techniques can be expensive and difficult to install, making real time monitoring of multiple wells impossible.

Distributed Acoustic Sensing (DAS) seeks to overcome this challenge. This new technology involves using a fibre optic cable mounted on the outside of the pipe to measure sound waves. The frequency and amplitude of the sound can then be used to model the flow rate and composition inside the pipe.

For this study group we will provide the participants with a data set of DAS recordings for experiments involving oil and water. These include a range of flow rates and ratios. The challenge is to explore different algorithms which can predict the flow rate and composition for new samples based on the training data.