

Actually, many devices used for flow rate measurement in oil and gas fiscal metering like orifice and turbine meters are often employed. This work deals with dispersion thermal flow meter fabricated by hot wire anemometers technology using the thermal domain for measuring natural gas in transaction operations, where it is unusually used.

The choice of this type of flow meters comes from the fact that the authors observed an abnormality in the production field in the south of Algeria. Which consists of the total flow rate of different wells is extensively different from the amount recovered in the storage bin especially in the summer season. We are sure that the use of this kind of device will help us to understand this irregularity.

The main objective of our work is to study the essential component of the thermal mass flow meter “thermal anemometer”, and to simulate this one with the parameters of Algerian gas field in order to have the ability to compare the results obtained with the field data.

Attention is paid to the sensors’ geometry. Thermal anemometer flows sensor may comprise a heater and several temperature sensors. They convert the flow energy overheat transfer into electrical signals