

Pipeline Thermo-Hydraulic Simulation Group

Presentation

SIMDUT – Pipeline Thermo-Hydraulic Simulation Group – is located at PUC-Rio, with the objective of acting in activities aimed at the development of simulation programs, training of specialized human resources, and providing engineering services and studies in the area of liquid and gas pipelines.



SIMDUT, originally located at Cardeal Leme's building (PUC-Rio), can be found at a 90m² area at the "Regional Center of Competence in Oil" of the university, which will host all activities of research and development in the oil and gas area.

History

SIMDUT was formed in 2002 as a result of an interaction between researchers in the area of computational fluid dynamics from PUC-Rio and TRANSPETRO's Technology Management. Since 2006, SIMDUT has been expanding its body of researchers to meet the growing demand for simulations and development of computer programs to simulate pipeline operations. At the same time, SIMDUT has contributed to the training of human expertise in the area by providing training courses and orientation of undergraduates and graduates. Technical papers were also developed and presented at national and international events.

Research and Development Areas

- Software development
- Pipeline thermo-hydraulic simulations
- Simulation of *pig* operations
- Evaluation of leaked volumes from pipelines
- Training of pipeline operators
- Simulation of gas delivery stations
- Analysis of the detachment of hydrate plugs in subsea lines
- Pipeline simulations for operational safety studies with simulations
- Pipeline operation optimization
- Numerical and experiemntal study of dynamic behavior of relief valves through theoretical and experimental study
- Pipeline simulation courses
- Technical and economic studies for new pipeline systems

CONTACT

www.simdut.com.br

simdut@simdut.com.br

Phone.: 55 21 3527-1018



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