

Structural integrity under extreme loads

Topic: High fidelity models of pipeline explosion

TITLE: Numerical models of hazardous events in gas transportation pipelines

RESEARCH BACKGROUND:

Although pipelines are widely used for gas transportation, accidents still occur due to the hazardous inflammable compound considered. Simulating explosions in pipelines is crucial to assess current infrastructure against adverse events. This thesis aims to numerically model and simulate explosions to assess the safety of pipelines.

RESEARCH ACTIVITIES:

1. Literature review of accidents related to pipeline explosions
2. Modelling of explosions through CFD
3. Numerical investigation of three representative case studies
4. Numerical structural assessment of pipelines against explosion

METHODOLOGY: Numerical

DURATION: 9 months

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