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Measuring the reliability of a natural gas refrigeration plant: Uncertainty propagation and quantification with polynomial chaos expansion based sensitivity analysis

Wahid Ali , Pham Luu Trung Duong , Mohd Shariq Khan , Mesfin Getu , Moonyong Lee

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HIGHLIGHTS

- Uncertainty quantification was performed to measure the reliability of natural gas liquefaction pr ocess.
- Surrogate model using polynomial chaos expansion approach was used for sensitivity analysis.
- Sobol´ sensitivity indices can be obtained directly from the surrogated gPC model.
- Study helps the robust design by evaluating the bounds and reliability based on confidence levels .

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