

Forecasting Gas Flow on Exits of Gas Transmission Networks

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Abstract

The flow of natural gas within a gas transmission network is studied with the aim to optimize the operation of such networks. The analysis of real data provides a deeper insight into the behavior of gas in- and outflow, and enables integration of stochastic aspects in optimization models.

Several methods for describing dependence between the maximal daily gas flow and the temperature on network exits are proposed. In particular, statistical modeling techniques such as nonlinear and penalized splines regression as well as data mining approach are presented. The prediction of gas loads for very low temperatures based on these methods, and the comparison of results are included.