***Modelling and simulation of gas networks for multi-energy applications***

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**Abstract:** Today, preliminary calculations of gas pressures and temperatures in gas networks are vital for the control, operation, and optimization of these networks. To create and operate gas transmission systems, it is necessary to create a workable model that allows linking the gas volume at the source with temperature, pressure. In order to develop or manage these networks it is essential to have simulation tools using as small computing time as possible while keeping a high degree of accuracy.