



MAX PLANCK INSTITUTE
FOR DYNAMICS OF COMPLEX
TECHNICAL SYSTEMS
MAGDEBURG



COMPUTATIONAL METHODS IN
SYSTEMS AND CONTROL THEORY

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Parametric Model Order Reduction for Gas Flow Models

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- A comparison of
- five data-driven and structured
- parametric model order reduction methods
- for nonlinear input-output systems,
- resulting from spatially discretized
- coupled partial differential-algebraic equations,
- modeling pipe gas flow.



1. Pipe Model

2. Network Model

8. Numerical Results

3. Discretization

7. Benchmark Model

4. Parametrization

6. pMOR Methods

5. Model Reduction

