**Model reduction for port-Hamiltonian differential-algebraic systems**

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We show how to combine model order reduction tecniques for differential-algebraic equations with port-Hamiltonian structure preservation. For this, we extend three classes of model reduction techniques (reduction of the Dirac structure, moment matching, and tangential interpolation) to handle port-Hamiltonian differential-algebraic equations. There are several challenges that have to be addressed. These include the preservation of constraints, the preservation of the structure, and the proof of error estimates. The performance of the methods is inllustrated for benchmark examples originating from semi-discretized flow problems, acoustic fields in gas networks, and mechanical multibody systems.