Model Order Reduction of FEM Piezoelectric Model

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Abstract. In the contribution, piezoelectric structure modeled by 2D solid finite element is presented. Stiffness, damping and mass matrices of 2D piezoelectric element were implemented into FEM code MultiFEM, where transient and modal analyses are performed. From modal analysis eigenvalues and eigenvectors are used to develop model order reduction (MOR). MOR model is transformed to state-space model which is more suitable for control design and analysis.