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ON THE STABILITY OF PGD REDUCED-ORDER MODELS FOR STRUCTURAL DYNAMICS APPLICATIONS

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The talk is concerned with the construction of proper-generalized decomposition formulations that preserve the structure and stability, such as the symplectic properties, of the original systems. The formulations are derived from the Hamiltonian formalism and will be shown to be more stable than classical approaches, e.g. [1]. The framework also allows one to define an optimization problem with constraints on the error in goal functionals in order to construct reduced models capable of delivering accurate approximation of quantities of interest [2]. Numerical examples dealing with the dynamical behavior of beam structures will be presented in order to demonstrate the efficiency of the proposed approach.

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