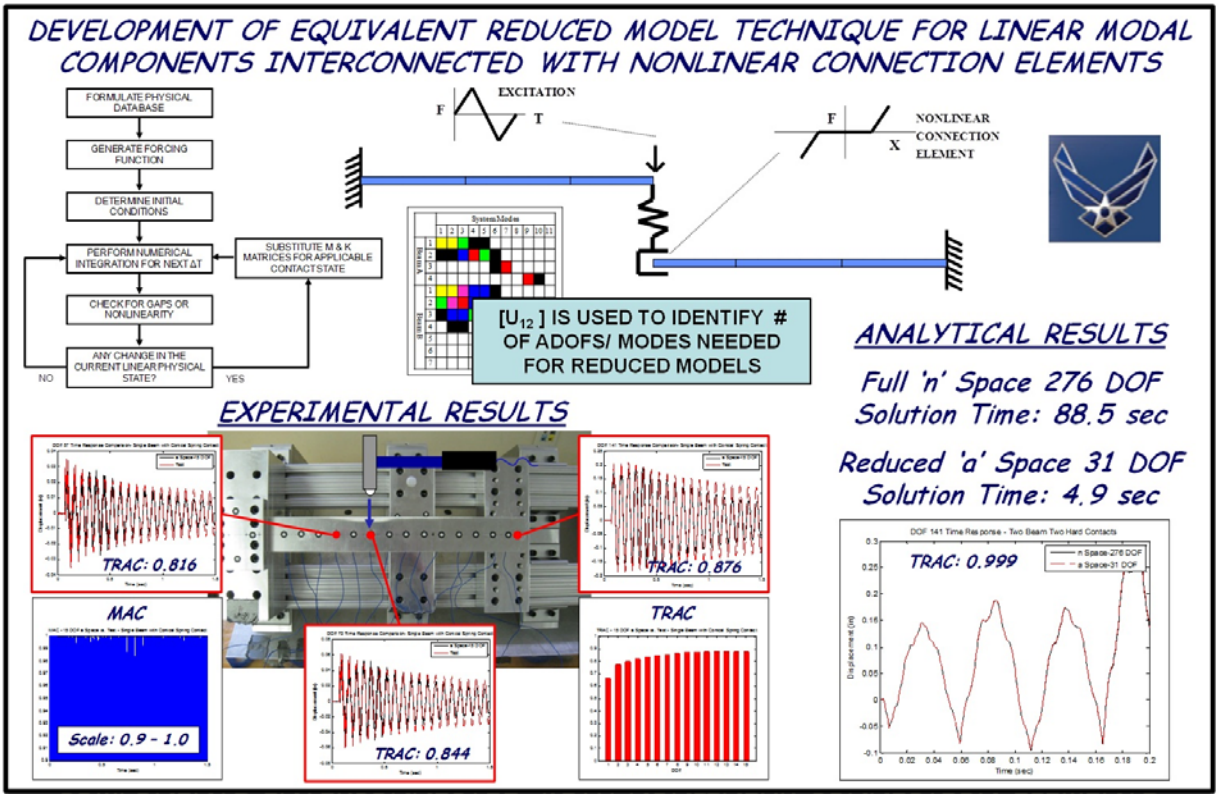
Equivalent Reduced Order Model Technique for Nonlinear Dynamic Response



The Equivalent Reduced Model Technique (ERMT) has been developed to address complicated nonlinear contact problems. Extremely reduced order models that preserve the dynamic characteristics of linear components, which are then interconnected with highly nonlinear connection elements, are formulated for computationally efficient nonlinear dynamic response evaluation using direct integration techniques. The [U12] matrix from the Structural Dynamic Modification methodology is used to identify the modes required to form accurate reduced order models. The technique has been shown to provide highly accurate nonlinear time response predictions with significant reduction in computation time for a variety of system configurations and contact scenarios.

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