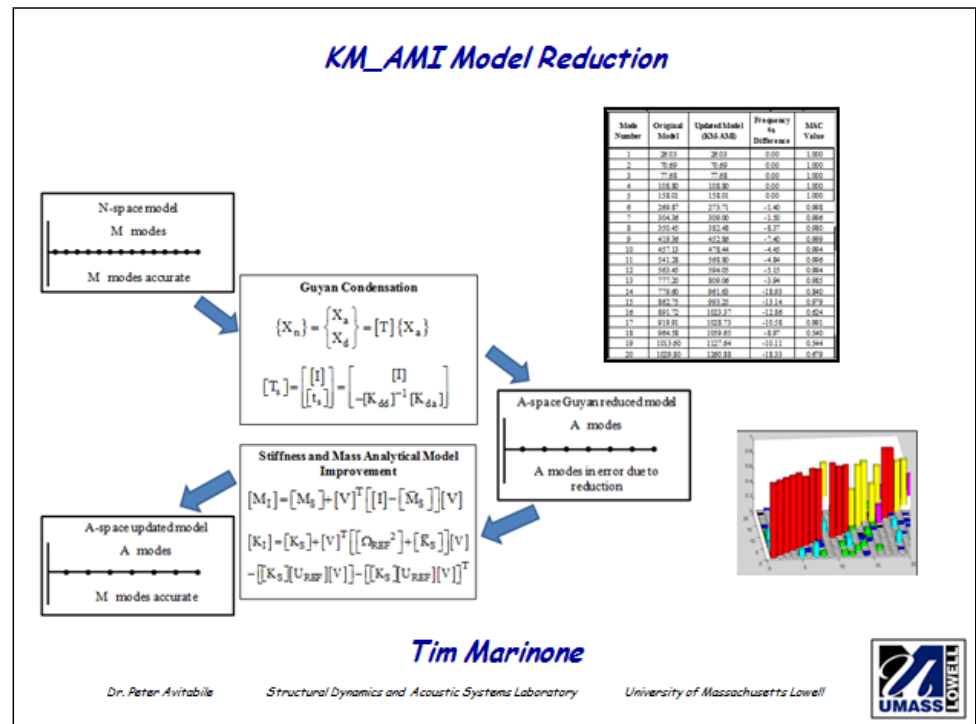


RESEARCH – TIM MARINONE

KM_AMI MODEL REDUCTION



Model reduction has been performed for several decades as an approach to allow for correlation of an analytical model to experimental data at a reduced number of points. Traditional reduction techniques have utilized static equations in order to obtain the transformation matrix while more recent techniques have utilized the mode shapes of the model.

This work presents an alternate methodology to model reduction using a traditional reduction technique to reduce the model and then improving the reduced model with the model mode shapes and frequencies from the full space finite element model. An analytical study on a cantilevered beam and general plate type structure shows that this approach contains advantages from both types of reduction techniques while minimizing the limitations.