

## **Tutorial - Introductory Talk - An Introduction to System-theoretic Methods for Model Reduction - Part IV - Interpolatory Methods for Nonlinear Dynamics**

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Building on Parts I (Benner), II (Gugercin), and III (Beattie) of the earlier tutorial talks on system-theoretic methods for model reduction, we will extend the concepts of transfer function, interpolation, and optimal H2 approximation to special classes of nonlinear systems described by quadratic and bilinear nonlinearities. We will use various numerical examples to illustrate the theoretical concepts introduced.