

# Highlights

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1. Coupled linear regression with Principal Component Analysis (PCA) using SVD, to obtain a 2D reduced order model
2. Benchmarked the 2D PCA and linear regression method by comparing with Arithmetic mean, Harmonic mean and PDF models
3. Demonstrated that the PCA-Linear regression technique can be extended to 3-D models with Higher Order SVD (HOSVD)
4. Performed a qualitative comparison of the models and simulation results for both the 2D and the 3D cases
5. The coupled PCA and linear regression model model presented a better representation compared to the other models