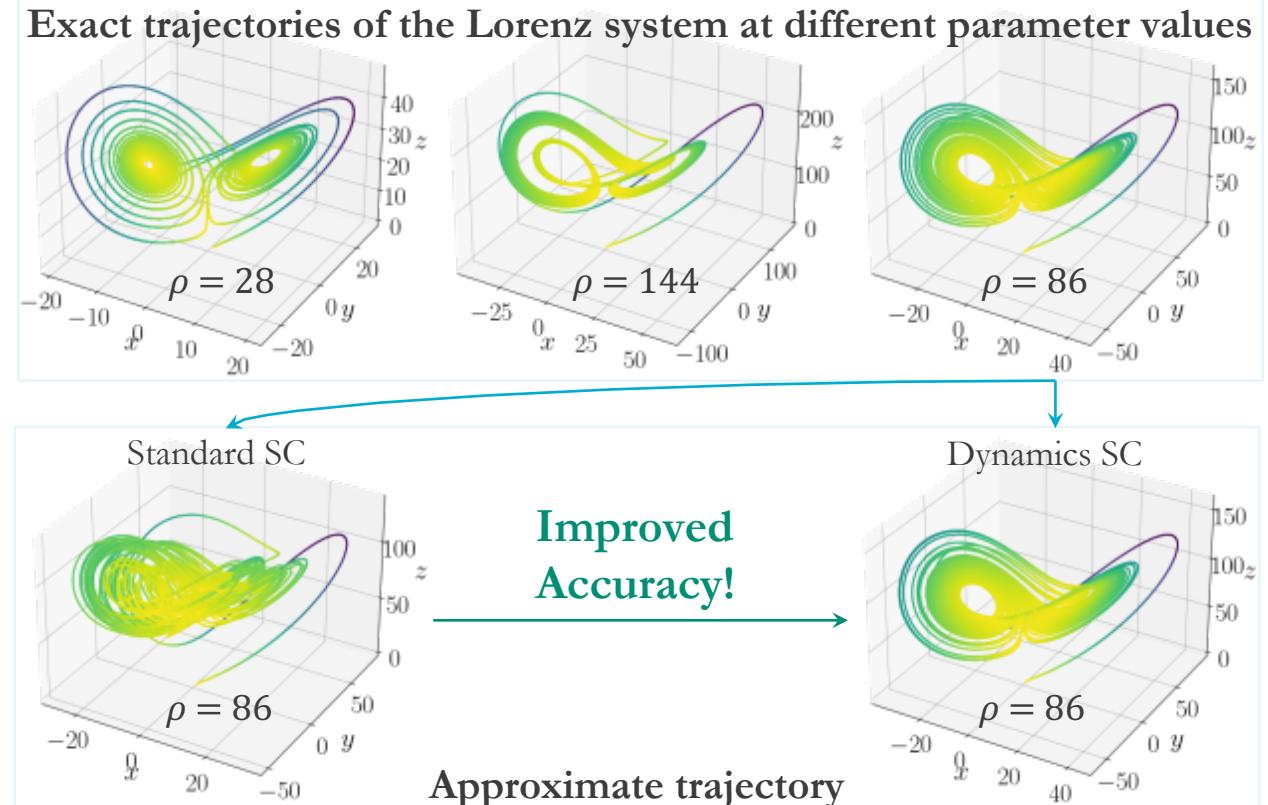


Uncertainty Propagation in Dynamical Systems via Stochastic Collocation on Model Dynamics

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- FEM discretization of solid mechanics: $\dot{\phi} = R(\phi, \lambda; X, t)$
- Surrogate models are necessary for uncertainty propagation
- Stochastic collocation: A simple non-intrusive surrogate
 - Computationally very cheap
 - Low accuracy unless high-order
- Improve accuracy by apply SC to dynamics R rather than state ϕ
- Application to simple systems
 - Lorenz System
 - Solid bar impact



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