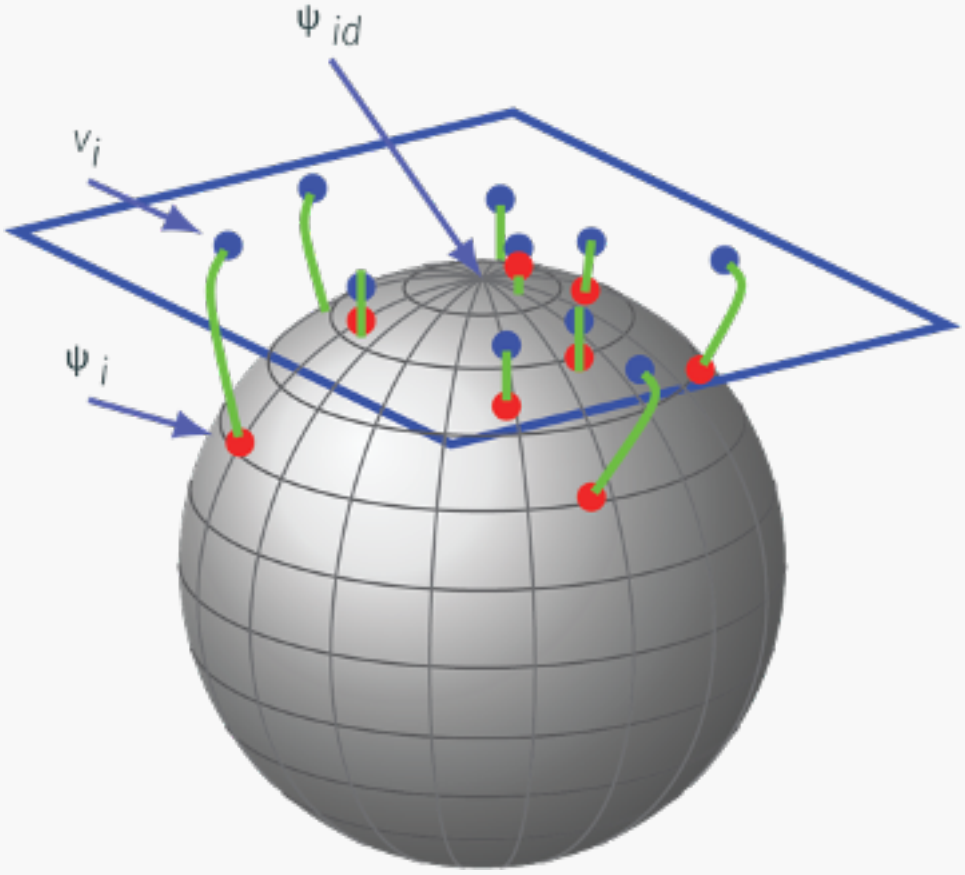
Analysis of Γ

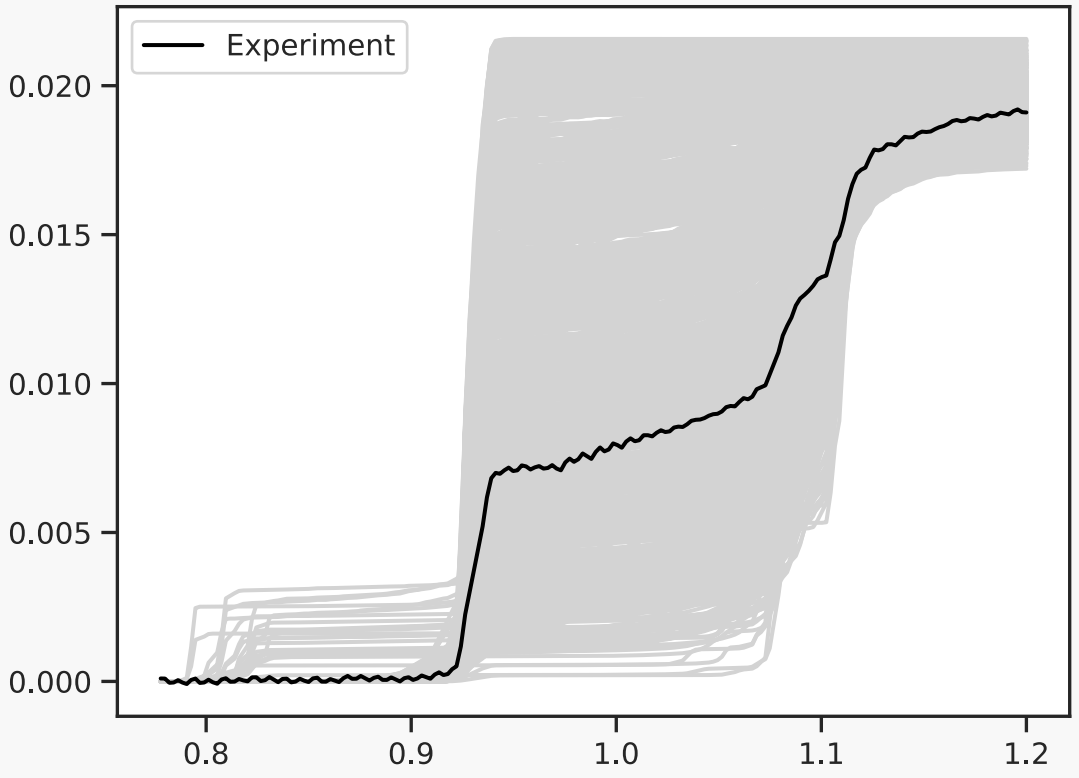
Γ is a nonlinear manifold and it is infinite dimensional

Represent an element of $\gamma \in \Gamma$ by the square-root of its derivative $\psi = \sqrt{\dot{\gamma}}$

Important advantage of this transformation is the set of all such ψ's is a Hilbert Sphere $\mathbb{S}_\infty$



Bayesian Model Calibration



- We wish to calibrate a computer model with parameters θ to an experiment
- Can compute computer model (simulations) over wide range of θ
- The data is functional in nature and has phase and amplitude variability
- Utilize elastic metrics in a Bayesian Model Calibration Framework