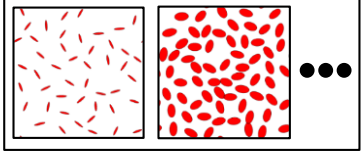
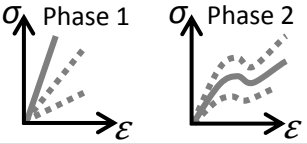
1. Design of Experiments

M **microstructures**



P **sets of material properties**



L **external conditions**

Deformation 1 Temperature 1
Deformation 2 Temperature 2

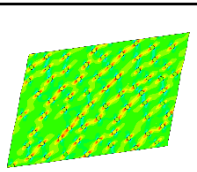
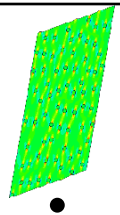
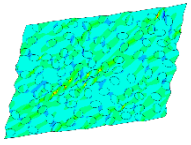
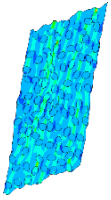
MxPxL samples (using cross-design)

2. Computational Analyses

Framework bottleneck:

Analyses need to be **Accurate** & **Efficient**

MxPxL **simulations** (using cross-design)

Property set *L*	External condition 1	•••	External condition *L*
RVE 1		•••	
RVE *M*		•••	

Design Samples

Predict macroscopic behavior

Refine sampling

Response Database

New Design or Model

Influence of design on response

3. Data mining