

**Data generation**  
 $\mathcal{S} : [\vec{\epsilon}, \vec{\sigma}, \vec{d}] \rightarrow \mathbf{X} \in \mathbb{C}^{n \times 4}$

Homogeneous  
Layered  
Realistic

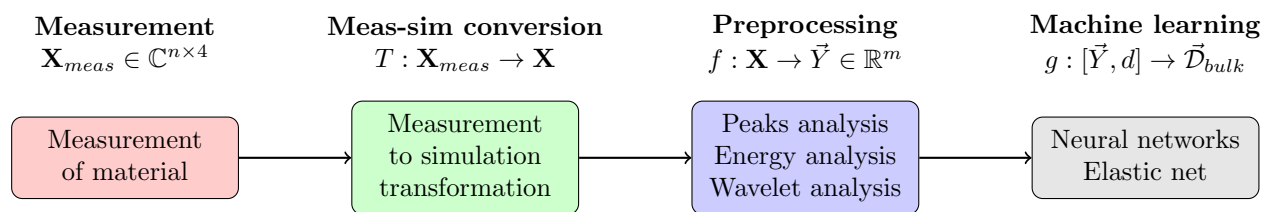
**Preprocessing**  
 $f : \mathbf{X} \rightarrow \vec{Y} \in \mathbb{R}^m$

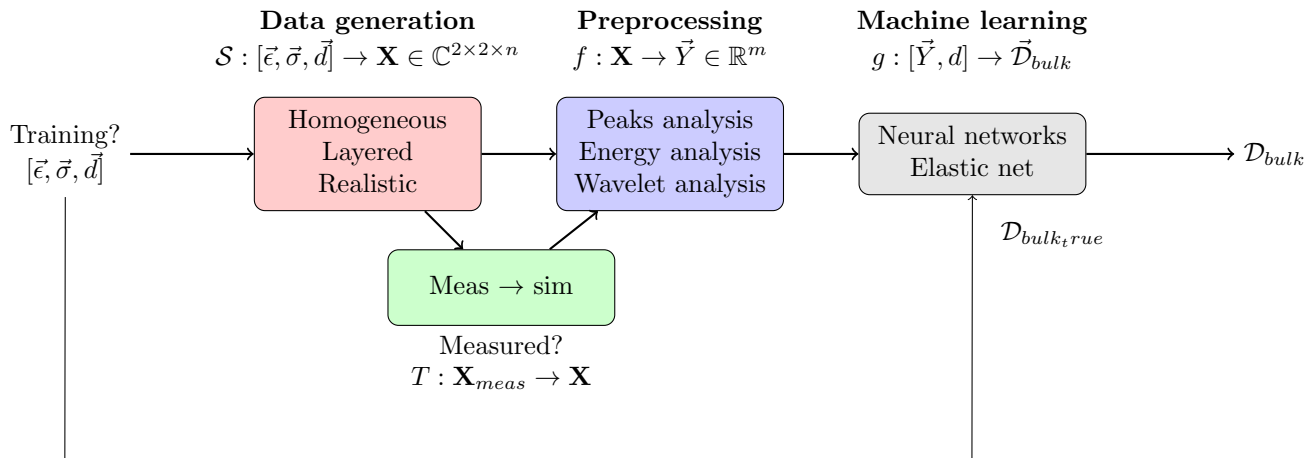
Peaks analysis  
Energy analysis  
Wavelet analysis

**Machine learning**  
 $g : [\vec{Y}, d] \rightarrow \vec{\mathcal{D}}_{bulk}$

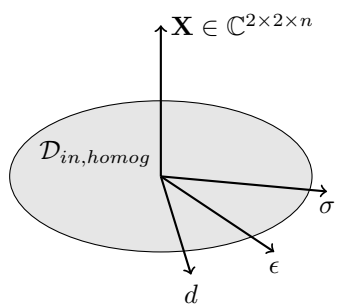
Neural networks  
Elastic net

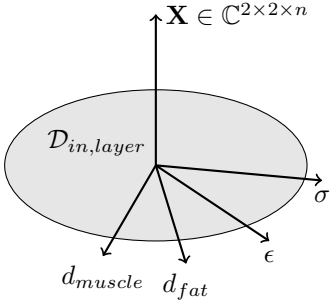


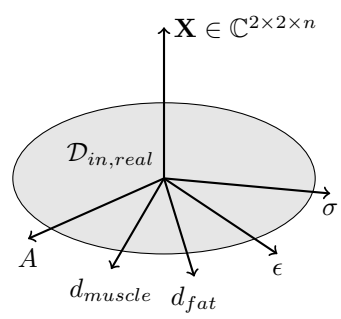












Outputs:

