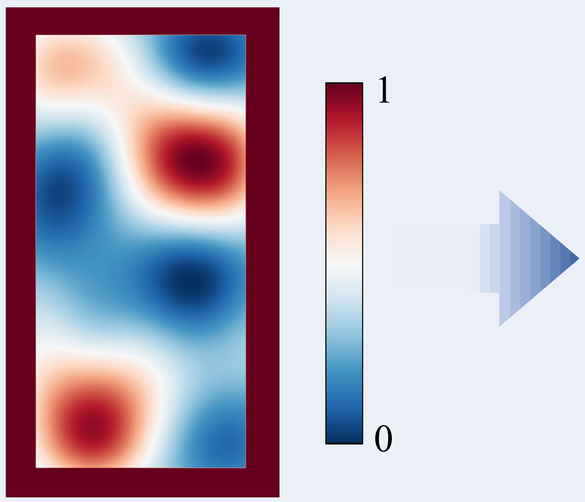
SPECIMEN TOPOLOGY

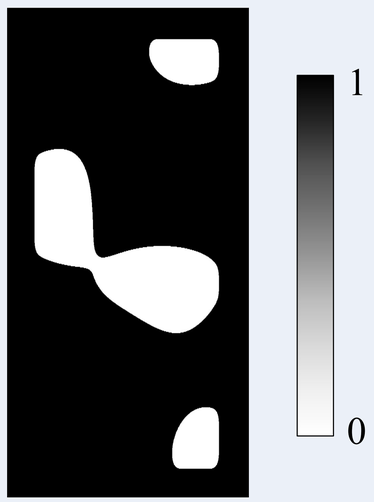
Gaussian random field

$$f(\mathbf{x}) = \mu(\mathbf{x}) + \sum_{i=1}^{N} \sqrt{\lambda_i}\phi_i(\mathbf{x})\,\xi_i$$



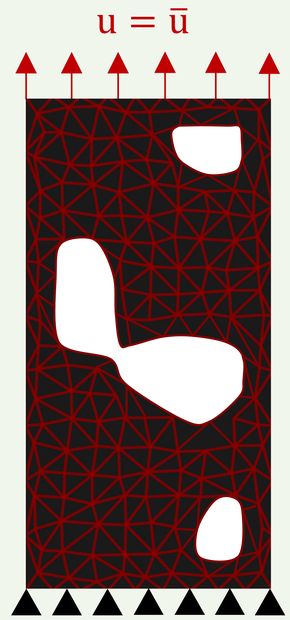
Discrete binary field

$$\mathcal{M}(\mathbf{x}) = \mathcal{H}(f(\mathbf{x}) - \tau)$$



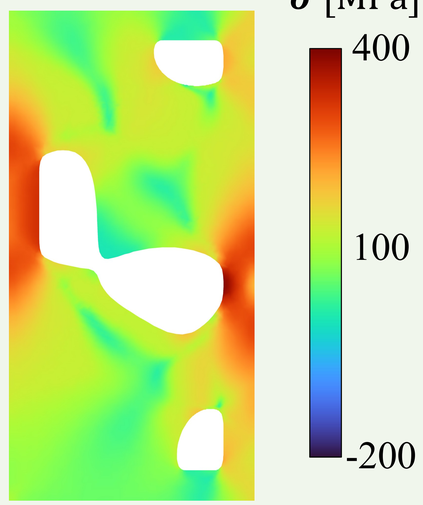
FINITE ELEMENT ANALYSIS

Discretized geometry



$\boldsymbol{\sigma} = f(\boldsymbol{u}, \boldsymbol{\varepsilon}, ..)$

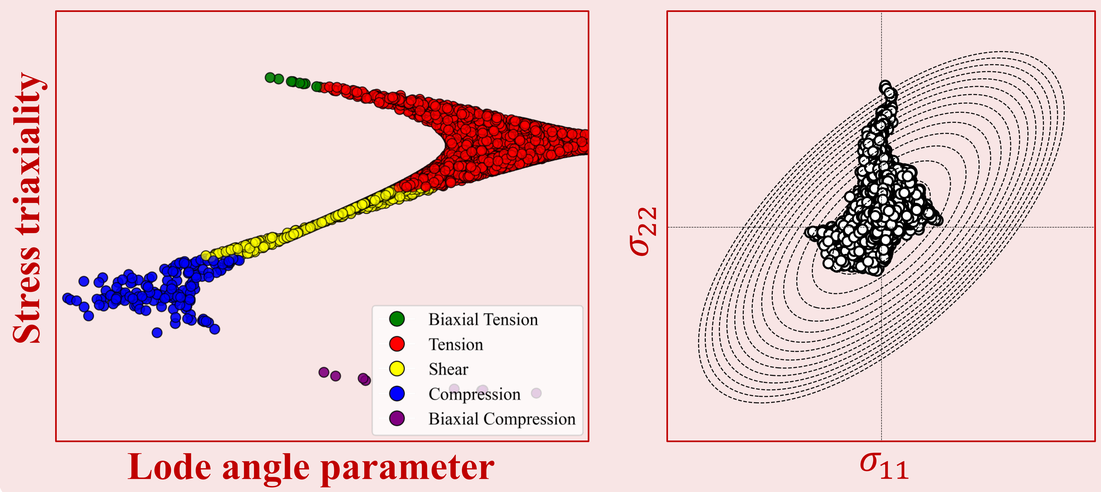
Stress field



MECHANICS INFORMATICS

Stress state entropy

$$\mathrm{H}(\Theta) = -\sum_{\sigma\in\Theta} p(\sigma)\ln p(\sigma)$$



BAYESIAN OPTIMIZATION

$$\boldsymbol{\theta}^* = \underset{\boldsymbol{\theta}\in\mathcal{D}}{\operatorname{argmax}}\,\mathrm{H}(\Theta) \qquad p(\mathrm{H}|\boldsymbol{\theta}) = \frac{p(\boldsymbol{\theta}|\mathrm{H})p(\mathrm{H})}{p(\boldsymbol{\theta})}$$

$$\boldsymbol{\theta} = [\lambda_i]$$