
$\mathcal{L}(\psi) = 0$
Definition of the microscale problem
Correct choice of the method !
$\langle \mathcal{L}(\psi) \rangle = 0$
Apply averaging operator
Define a different average operator
$\psi = \langle \psi \rangle^{\beta} + \tilde{\psi}$
Apply field decomposition
$\mathcal{L}(\tilde{\psi}) - \left\langle \mathcal{L}(\tilde{\psi}) \right\rangle = \mathcal{S}$
Determine perturbation problem
Make length-scales assumptions
Make different assumption
Apply length-scales assumption
$\tilde{\psi} = \mathbf{R} \langle \psi \rangle^{\beta}$
Establish the relation between micro-macro fields
$\mathcal{Q}(\mathbf{R}) = 0$
Define the local perturbation problem
$\mathbf{H} = \mathcal{F}(\mathbf{R})$
Compute macro-scale effective parameters
It is the correct choiche to my problem?
$\mathcal{M}(\langle \psi \rangle^{\beta}) = 0$
Compute macro-scale problem
Define domain of validity