

Connecting the "Dots": Topology Optimization for Fiber-Reinforced Composites

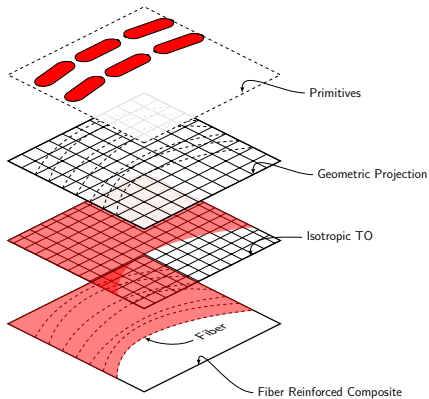
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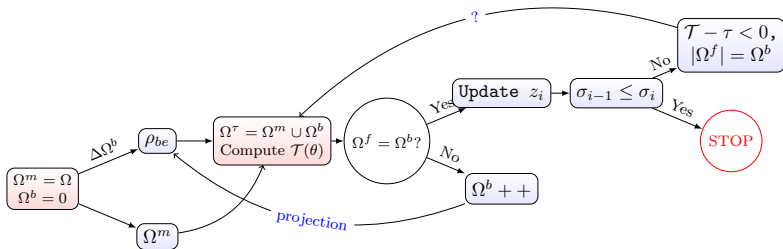
Delft University of Technology, The Netherlands

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Simultaneous Fiber & Composite Topology Optimization



Two phases topological derivatives



- ① Initilaized $\Omega^m = \Omega$ and ρ_{be}
- ② Compute $\mathcal{T}(\theta) \hat{=} \psi$
 - Generate topological sensitivity field for incorporating fiber inclusions.
 - ρ_{be} considered as single entity
- ③ Check desired fiber fraction
 - $\Omega^b ++ \Rightarrow \rho_{be}$;
 - Check convergence

Activities so far...

What have I studied?

- Analyzed the isotropic PyGTO
- Connective primitives to promote continuous joints

What am I investigating?

- Using the functionality of PyGTO to run SIMP TO
- Using same for level-set methods
- PyGTO code for orthotropic materials