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SAMARA UNIVERSITY

Fatigue crack growth in composite constructions

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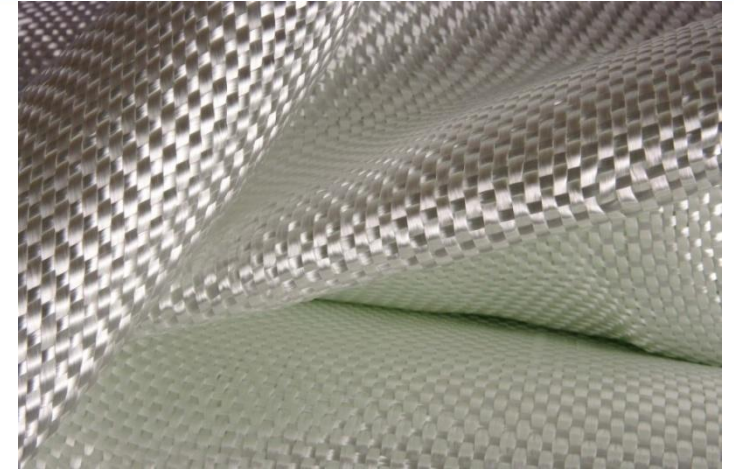
Composite materials



Carbon composite



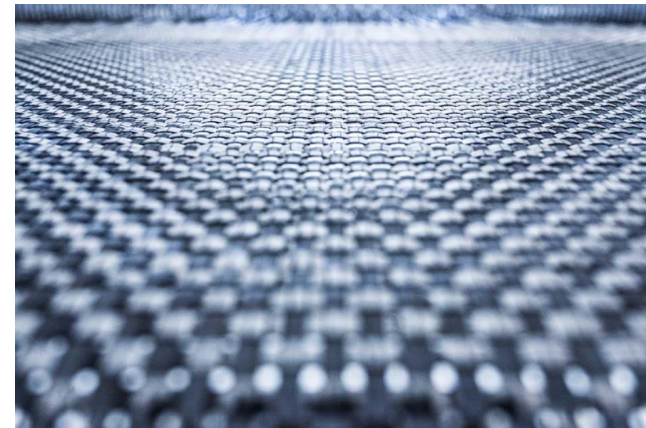
Epoxy



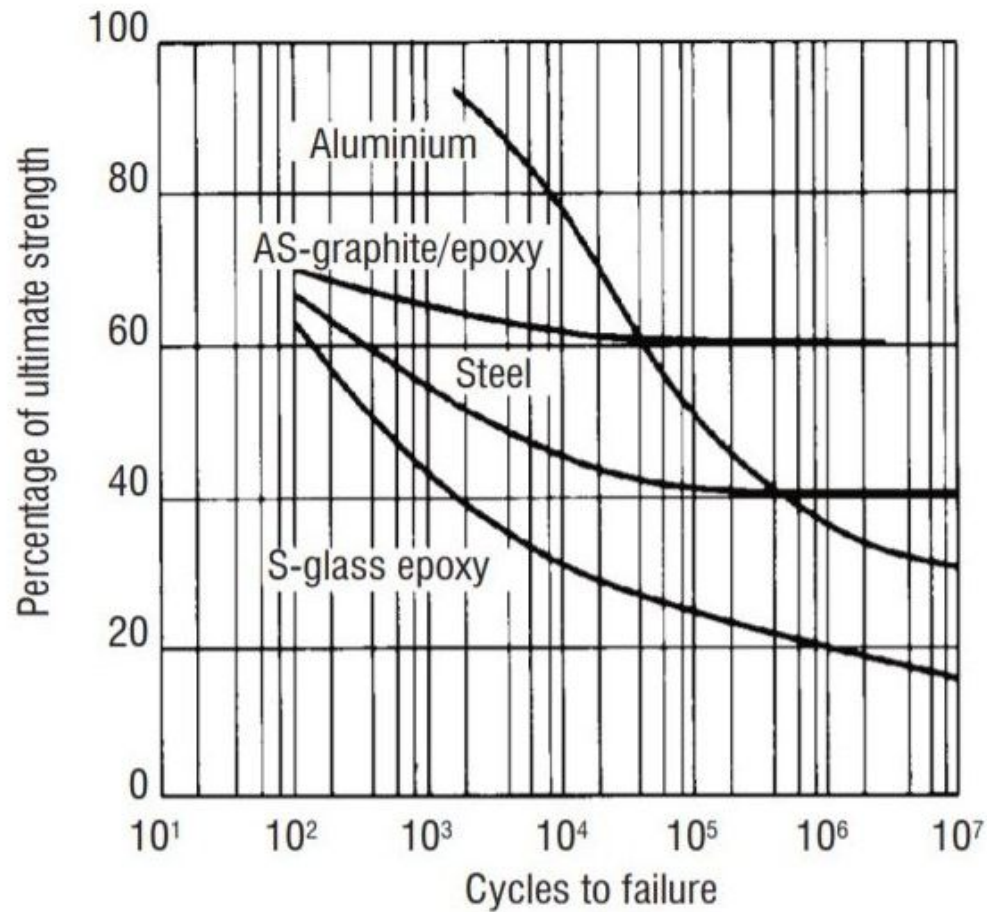
Fiberglass



Organic plastic

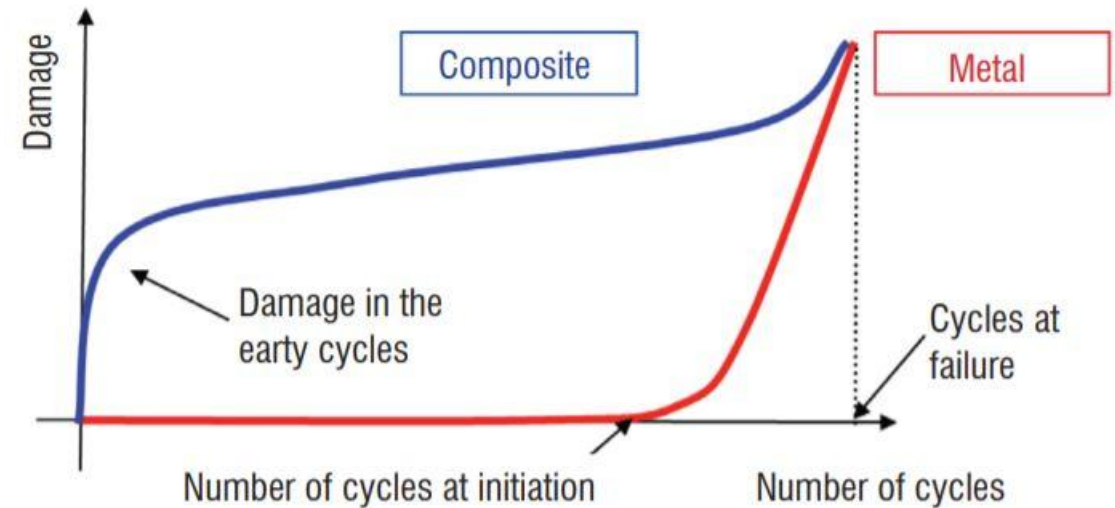


Woven



Comparison of fatigue strength

Metals and composites behave differently under fatigue loading.

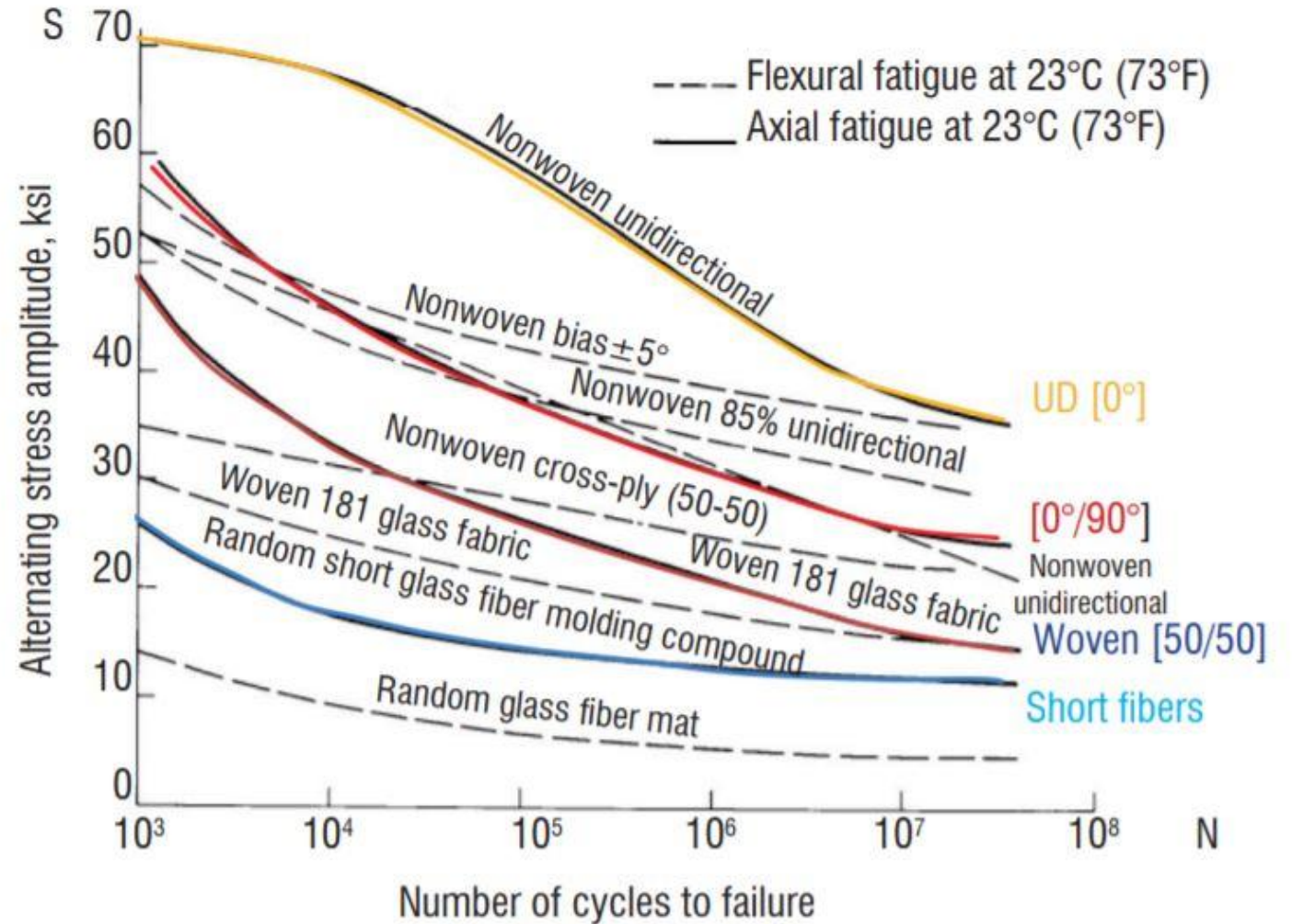


Composite materials exhibit a better resistance to fatigue compared to metals.



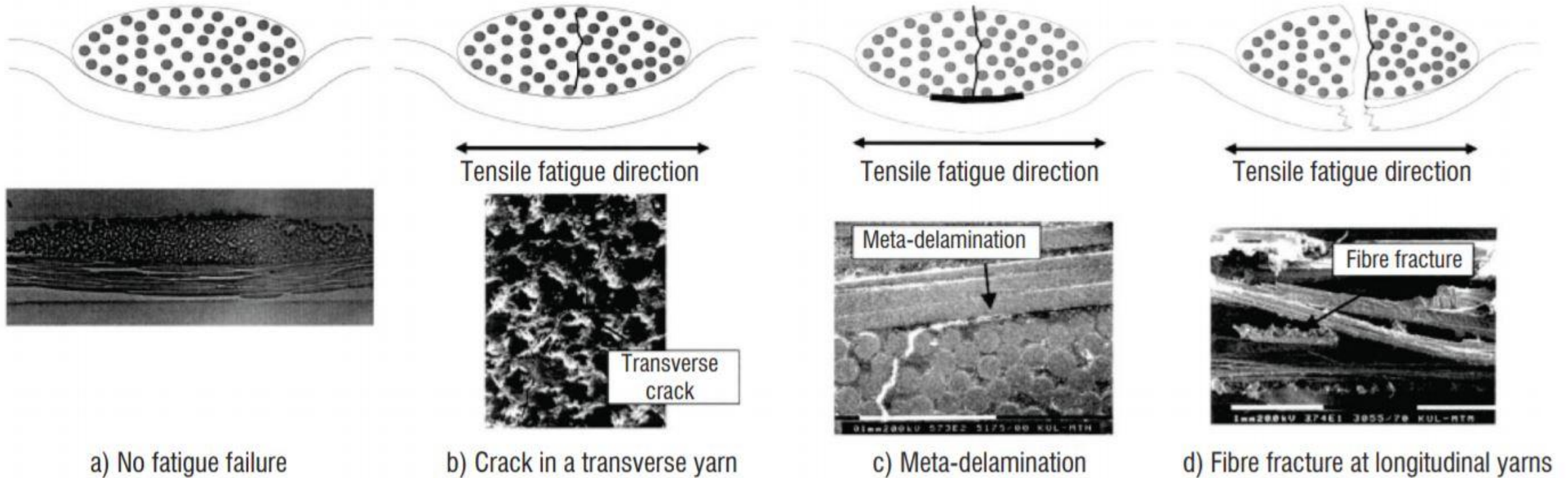
Comparison of fatigue strength of different composites

Due to the variety of configurations (types of fiber, resin and lay up) composites are not totally sheltered from fatigue damage.

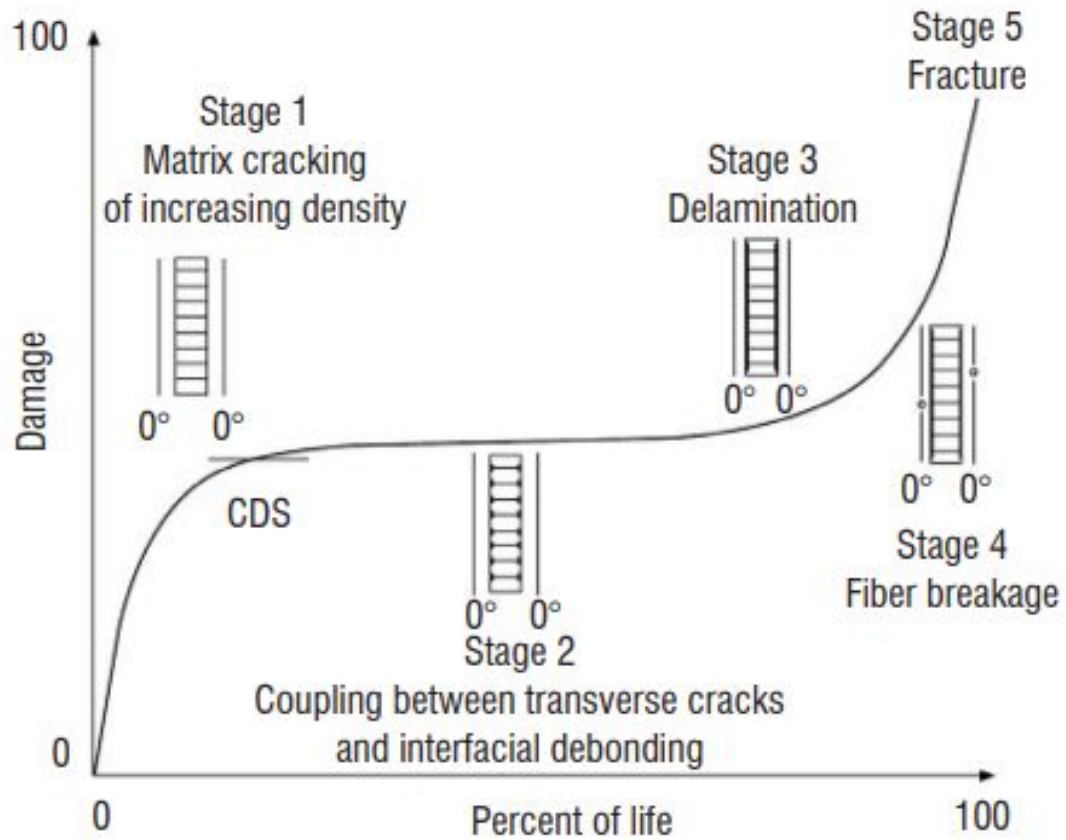




Tensile fatigue damage

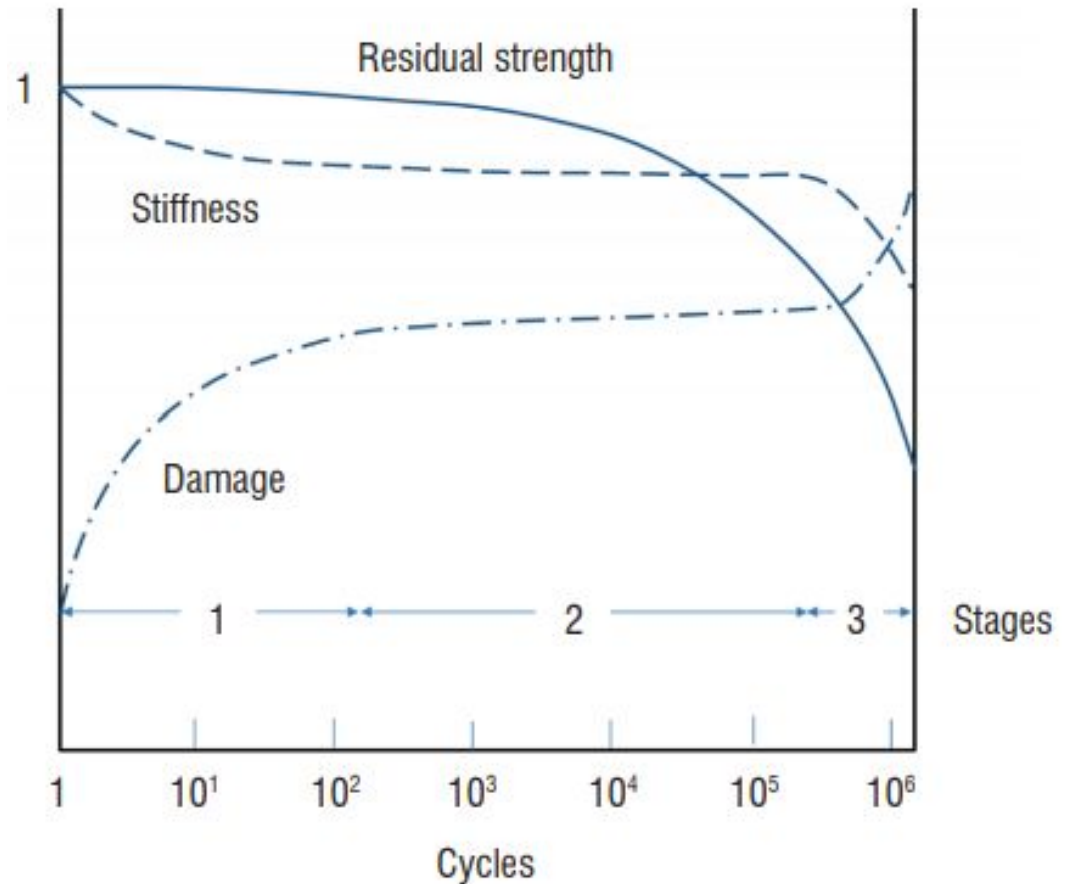


Scheme of tensile fatigue damage development in woven fabric composites, subjected to a tension-tension fatigue loading in the weft direction



Fatigue crack growth in cross-ply laminates

The three characteristic stages of fatigue damage in composites





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**Thank you for the
attention!**