

## Fatigue in polymer based composites

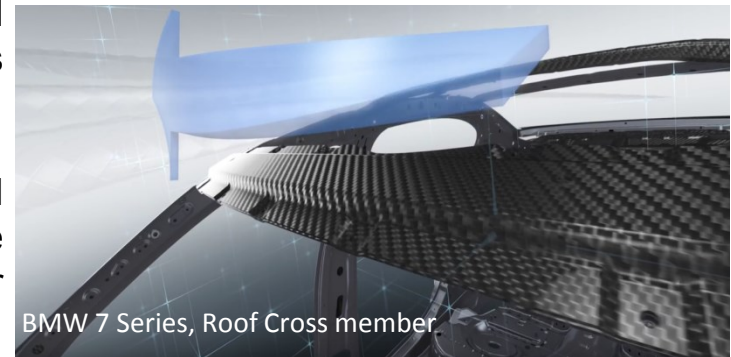
Polymer based composites due to their specific strength and stiffness, resistance to environmental effects; low weight and high fatigue life are widely used by automotive industries. Because of inhomogeneity and anisotropy of composite material, defining a unique fatigue criterion to be suitable for different loading condition is much more difficult in comparison with traditional material (S-N curve).

Cumulative fatigue damage criteria for composite material based on the current studies has been planned to investigate in this research.

Main topics of the thesis:

- Create a model which is able to demonstrate the residual strength, residual stiffness and fatigue life of composite laminate with arbitrary geometry and stacking sequence under complex fatigue loading condition.
- Implement the Simulation in a general FEM code (ABAQUS)
- Write a material model with FORTRAN code is necessary.

Sufficient experience and knowledge working with ABAQUS and programing are expected.



**Interesse?**

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