

Fatigue of cohesive joining in light weight structures

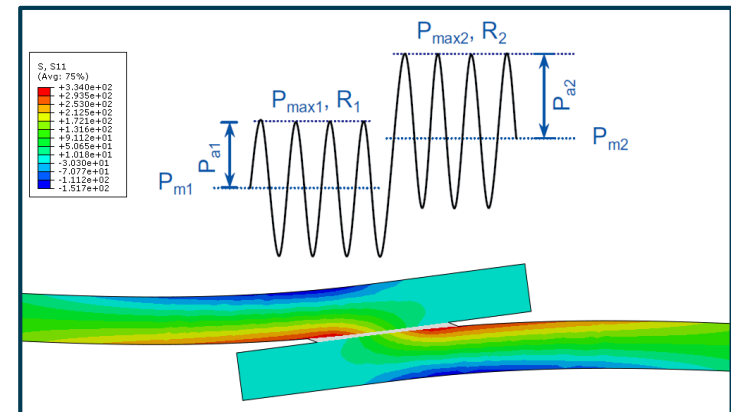
Bonded joints are replacing conventional joining techniques such as bolted or riveted joints for a number of reasons, including; low weight, high stiffness, ability to join dissimilar materials and more uniform stress distribution. Fatigue is one of the most common yet complicated failures that can damage multi-material structures including bonded joints.

A number of methods to model the fatigue behavior of bonded joints have been proposed; the total life approach (the average stress amplitude per the number of cycles to failure) S–N curve or the maximum fatigue load approach.

Main topics of the thesis:

- Create a model which is able to demonstrate the residual strength, residual stiffness and fatigue life of cohesive bond in a lap-joint under 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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