



Composites delamination: modelling and characterisation

Day 1: January 25th, 2022

Time	Activity
	1 st Lecture
5 min	Introduction
45 min	<ul style="list-style-type: none">• Introduction to delamination• Modelling interface cracks:<ul style="list-style-type: none">○ crack propagation modes○ traction-separation behaviour○ initiation, propagation, cohesive length○ limit case: linear elastic fracture mechanics
15 min	[audience interaction]
	2 nd Lecture
45 min	<ul style="list-style-type: none">• Linear elastic fracture mechanics:<ul style="list-style-type: none">○ hypotheses and derivation○ strain energy release rate and dissipated energy○ stable and unstable crack propagation• Illustration: modelling the Double Cantilever Beam (DCB) test
15 min	[audience interaction]

Optional homework:

post-treatment of DCB test data according to ASTM standard

Day 2: February 1st, 2022

Time	Activity
	3 rd Lecture
45 min	<ul style="list-style-type: none">• Characterisation tests for composites delamination<ul style="list-style-type: none">○ DCB test standard (homework correction)○ mode II standards: 3- and 4- point End Notched Flexure (ENF)○ mixed mode standards: Mixed Mode Bending (MMB)○ limitations
15 min	[audience interaction]
	4 th Lecture
45 min	<ul style="list-style-type: none">• Characterisation tests for adhesives debonding<ul style="list-style-type: none">○ Climbing Drum Peel (CDP) test for sandwich debonding○ Peel tests○ Other testing configurations
15 min	[audience interaction]
5 min	Closing