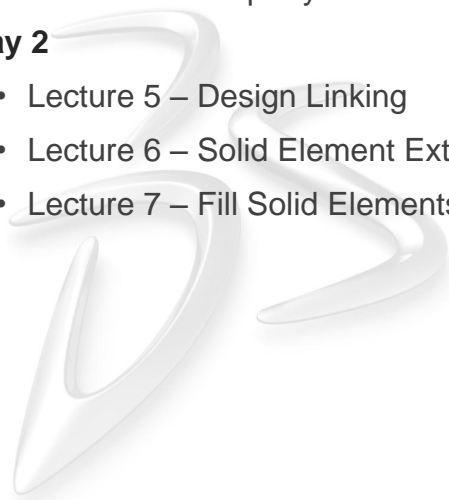


Composites Modeler for Abaqus/CAE



Lectures

- **Day 1**
 - Lecture 1 – Ply Modeling
 - Lecture 2 – Draping Simulation
 - Lecture 3 – Draping Simulation 2
 - Lecture 4 – Property Generation and Mapping
- **Day 2**
 - Lecture 5 – Design Linking
 - Lecture 6 – Solid Element Extrusion
 - Lecture 7 – Fill Solid Elements



Workshops

- The workshop files are found in the Examples directory of the CMA installation
 - e.g. C:\Program Files\Simulayt\Composites Modeler\Abaqus\Examples
- The workshops are integrated into the lectures and are denoted as “case studies”

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Revision Status

| | | | |
|-----------|------|----------|------------------------|
| Lecture 1 | 5/11 | CMA 1.0h | Updated for Abaqus 6.9 |
| Lecture 2 | 5/11 | CMA 1.0h | Updated for Abaqus 6.9 |
| Lecture 3 | 5/11 | CMA 1.0h | Updated for Abaqus 6.9 |
| Lecture 4 | 5/11 | CMA 1.0h | Updated for Abaqus 6.9 |
| Lecture 5 | 5/11 | CMA 1.0h | Updated for Abaqus 6.9 |
| Lecture 6 | 5/11 | CMA 1.0h | Updated for Abaqus 6.9 |
| Lecture 7 | 5/11 | CMA 1.0h | Updated for Abaqus 6.9 |

Composites Modeler for Abaqus/CAE Ply Modeling

Lecture 1

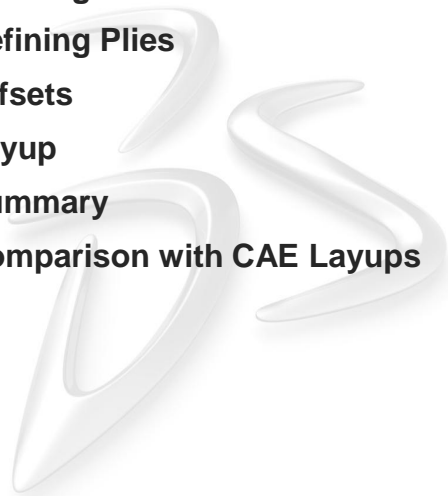


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L1.2

Overview

- CMA Overview
- Glossary
- Why ply modeling?
- Case Study: Beam with ply drop off
- Defining Materials
- Defining Plies
- Offsets
- Layup
- Summary
- Comparison with CAE Layups



 SIMULIA

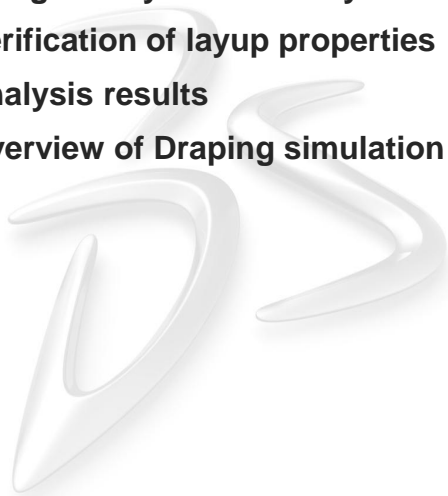
Composites Modeler for Abaqus/CAE Draping Simulation

Lecture 2



Overview

- Why draping simulation?
- Introduction to curved surfaces
- Case Study: Hemisphere
- Drape simulation
- Assign analysis boundary conditions and run simulation
- Verification of layup properties
- Analysis results
- Overview of Draping simulation controls (basic)



Composites Modeler for Abaqus/CAE Draping Simulation 2

Lecture 3



L3.2

Overview

- **Why advanced draping options?**
- **Case Study: Space Structure Component**
- **Advanced draping simulation controls**
 - Boundaries
 - Splits
 - Order of Drape (sequential draping)
- **Case Study: Curved Frame**
- **Advanced draping simulation controls**
 - Seed Curve
- **Simulation Problems**
- **Projection Methods**



Composites Modeler for Abaqus/CAE Property Generation and Mapping

Lecture 4



Overview

- **Property Generation Overview**
- **Generating Sections**
 - Orientations
 - Sorting
 - Naming
 - Options
- **Generating CAE Layups**
- **Case Study: Cooper Hood**
- **Layup Mapping**
- **Case Study: Cooper Hood Remeshing**



Composites Modeler for Abaqus/CAE Design Linking

Lecture 5



Overview

- Composites Data Transfer
- Case Study: Design Linking - CATIA CPD
- Case Study: Design Linking - FibreSIM



Composites Modeler for Abaqus/CAE Solid Element Extrusion

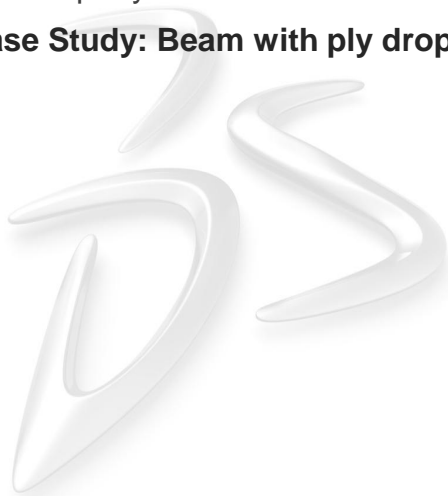
Lecture 6



L6.2

Overview

- Overview of Solid Elements
- Solid Element Extrusion
 - Extrusion Methods
 - Extrusion Options
 - Property Generation
- Case Study: Beam with ply drop offs



Composites Modeler for Abaqus/CAE Fill Solid Elements

Lecture 7

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L7.2

Overview

- Overview of Fill Solid
- Filling Solid Elements
 - Definitions
 - Mesh
 - Properties
 - Mid-plane Layup
- Case Study: “Simple Blade”
- Case Study: “Taper Beam”

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