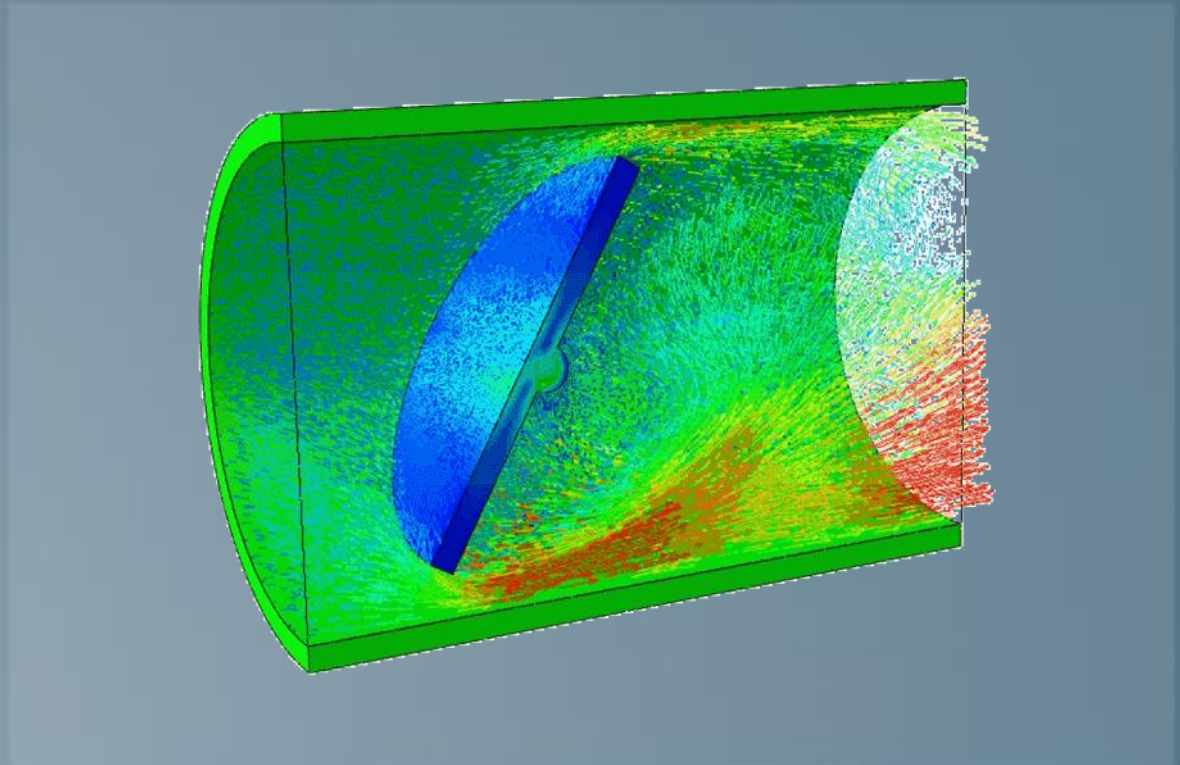


# Multiphysics Scenario Creation Essentials

R2015x



3DEXPERIENCE



# About this Course

## Course objectives

Upon completion of this course you will be able to:

- ▶ Set up and create CHT and FSI models for co-simulation analysis in the **3DEXPERIENCE** Platform
- ▶ Perform FSI co-simulation analyses
- ▶ Perform CHT co-simulation analyses
- ▶ Postprocess FSI and CHT results

## Targeted audience

This course is intended for the following role:

- ▶ Multiphysics Simulation Researcher

## Prerequisites

The following courses are required prior to taking this one:

- ▶ Mechanical Scenario Creation Essentials
- ▶ Fluid Mechanics Analyst Essentials



4 hours

# Day 1

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- ▶ Lesson 1 Introduction to Co-simulation Analysis
- ▶ Lesson 2 FSI/CHT Co-simulation Analysis
- ▶ Workshop 1 Transient Flow over a Flexible Baffle
- ▶ Lesson 3 Running Co-simulation Analysis and Postprocessing
- ▶ Workshop 2 Conjugate Heat Transfer (CHT) Co-simulation Analysis of a Heated Fin

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Connect with peers to share knowledge and get technical insights



 SIMULIA

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 | The 3DEXPERIENCE Company

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# Revision Status

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|            |      |                |
|------------|------|----------------|
| Lesson 1   | 2/15 | New for R2015x |
| Lesson 2   | 2/15 | New for R2015x |
| Lesson 3   | 2/15 | New for R2015x |
| Workshop 1 | 2/15 | New for R2015x |
| Workshop 2 | 2/15 | New for R2015x |

# Lesson 1: Introduction to Co-simulation Analysis

## *Lesson content:*

- ▶ Co-simulation Analysis
- ▶ Co-simulation in the **3DEXPERIENCE** Platform
- ▶ Fluid-Structure Interaction
- ▶ Conjugate Heat Transfer Co-simulation



30 minutes

# Lesson 2: Co-simulation Analysis

## *Lesson content:*

- ▶ Creating Co-simulation Analyses
- ▶ Navigating Analysis Cases in Co-simulation
- ▶ Co-simulation Interface
- ▶ Fluid-Structure Interaction Co-simulation
- ▶ Conjugate Heat Transfer Co-simulation
- ▶ Co-simulation Attributes
- ▶ Stability: Fluid-Structure Interaction Co-simulation
- ▶ Stability: Conjugate Heat Transfer Co-simulation
- ▶ Workshop Preliminaries



30 minutes



# Lesson 3: Running Co-simulations and Postprocessing

## *Lesson content:*

- ▶ Running Co-simulation Analysis
- ▶ Accessing Results
- ▶ Results Visualization
- ▶ Contour Plots
- ▶ Symbol Plots
- ▶ Isosurface Plots
- ▶ Activating Multiple Plots
- ▶ Showing Min/Max Values
- ▶ Controlling Plot Legends
- ▶ View Cuts
- ▶ Stream Toolset (Instantaneous Particle Traces)
- ▶ Rendering Settings
- ▶ Display Groups
- ▶ Creating Reports



30 minutes