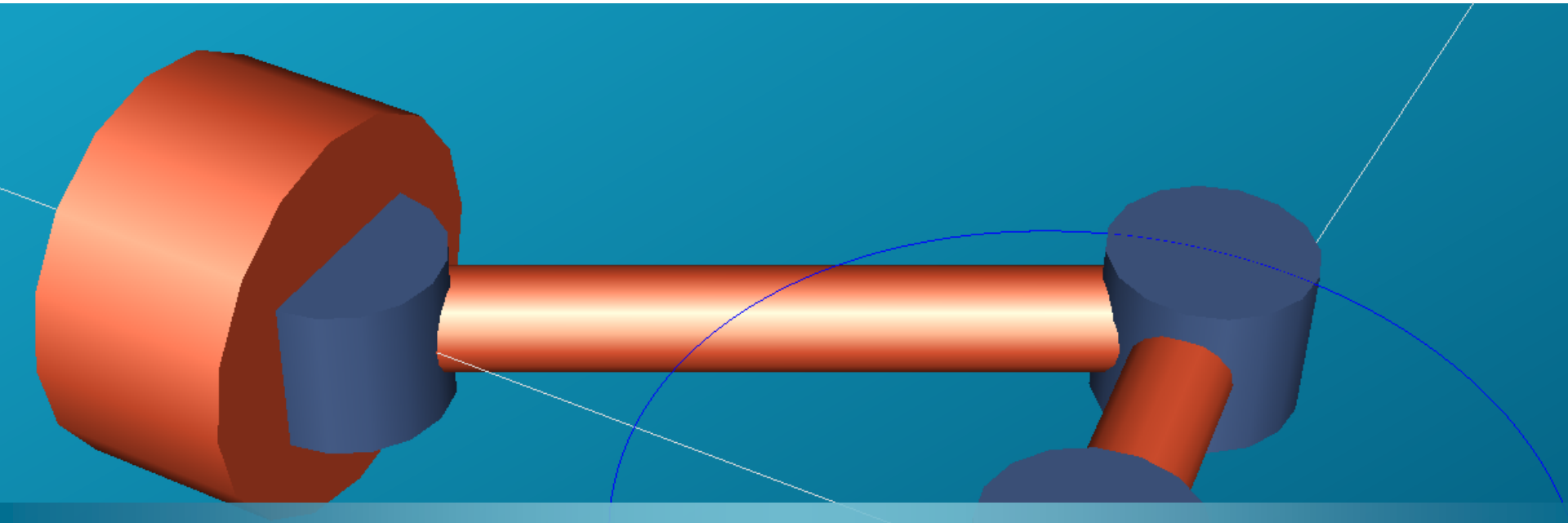
Modelon



MECHANICS MODELING

Overview

DAY 1

- Lecture 1 — Introduction to Mechanical Modeling and Libraries
  - Workshop 1 — Introduction to MSL Mechanics
- Lecture 2 — Working with MSL Translational and Rotational Library
  - Workshop 2 — Working with MSL 1-D Libraries
- Lecture 3 — Working with MSL MultiBody Dynamics Library
  - Workshop 3 — Using the MultiBody Dynamics Library
- Lecture 4 — Advanced MultiBody Topics – Implementing components
  - Workshop 4 — Creating equation based components

MECHANICS MODELING

Introduction to Mechanical Modeling and Libraries

OVERVIEW

- Overview of available libraries for mechanics modellig
- Modelica.Mechanics
  - Rotational
  - Translational
  - MultiBody

Workshop 1

- Getting familiar with the Modelica.Mechanics libriaries

MECHANICS MODELING

Working with MSL Translational and Rotational Library

OVERVIEW

- Basic components
  - Sign convention and implications
  - Force and torque balance
  - Flipping components
- Component implementation

Workshop 2

  - Rotational and translational systems
  - Cable winder and elevator

MECHANICS MODELING

Working with MSL MultiBody Dynamics Library

OVERVIEW

- Connector definition
  - Representation of position and orientation
- Closing a loop
  - Branch functions
  - Connection graphs
  - Assemblies
- Graphics
  - Primitives, Visualizers, Post-processing

Workshop 3

- Slider crank
- Crane

MECHANICS MODELING

Advanced MultiBody Topics –
Implementing components

OVERVIEW

Creating Multi-body components

- Connector relations
- Examples
- Using Frame functions

Workshop 4

- Creating a screw joint based on primitives
- Creating a screw joint with Modelica code

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