Belts Library *– enhanced version*

Static and Dynamic Analysis of Belt Drive Systems

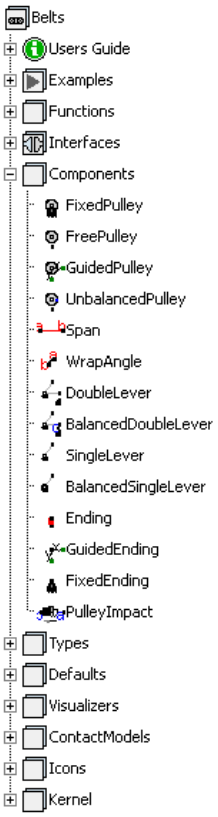
Belts | Modelica Library

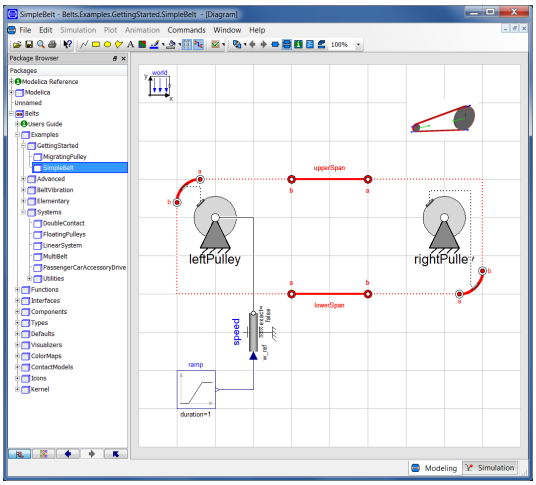
developed by Frank Rettig
distributed by BAUSCH-GALL GmbH

The Belts Library contains elements for the static and dynamic analysis of belt drive systems.

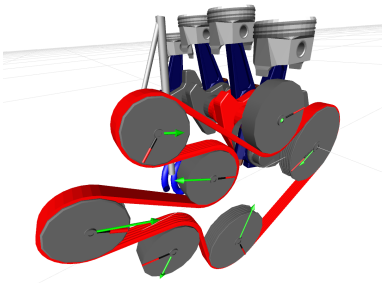
It is assumed that the belt drive is a planar system. The most important elements of the model library include:

- belt pulleys with fixed axis and specified rotation
- belt spans as idealized spring/damper elements (Kelvin-Voigt model)
- belt spans capable of transversal vibrations
- belt pulleys whose axis of rotation is connected to a frame from the Multi-Body Library





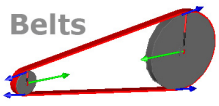
Simple belt model



Animation of a passenger car accessory drive

The Belts Library includes components like levers, endings, wraps, contact models, functions for belt calculations and interfaces for belt drive components.

Adapted advanced animation components make it easier to understand the dynamic behaviour of the model. Visualizers for 2- and 3-dimensional visual objects are used for animation of the belt drive. Many examples are delivered to explain the usage of the Belts Library. A User's Guide completes the package.



Development

Frank Rettig, Germany

Availability

Version 3.2 of this library is currently available for Dymola 7.4 (Modelica 3.1), Dymola 7.4 FD01 and Dymola 2012 (Modelica 3.2).
It is planned to make the Belts Library available for SimulationX soon.