The MapleSim Ropes and Pulleys Library allows you to easily create winch and pulley systems as part of your machine development. Using this add-on library to MapleSim, you can model the dynamics of rope and pulley systems, and view enhanced 3-D visualizations of your system’s performance. Use the Ropes and Pulleys Library to add fidelity to your machine models with ropes, chains, cables, pulleys, and more.

The MapleSim Ropes and Pulleys Library contains a variety of components that can be customized to suit your specific model.

**Features include:**

- **Rope:** Axial rigidity, linear density, linear damping, pre-tension, automatic length calculation, visualizations for material tensions, and more

- **Cable:** Axial rigidity, linear density, linear spatial damping, discretized 3-D mass distribution, wind forces, and more

- **Chain:** Axial rigidity, linear density, bending rigidity, discretized 3-D mass distribution, and more

- **Pulley:** Mass and inertia, slippage, motorization, and 3-D visualization

- **Winch:** Motorization, 3-D visualization and tension variation visualization

**Highlights**

- **Create both 2-D and 3-D pulley systems** using components such as fixed and floating pulleys, winches, ropes, chains, and cables.

- **Incorporate realistic behaviors** of ropes and pulley systems, including pulley slippage, chain masses, cable bending, and wind loading.

- **Explore systems with 3-D visualizations** that show material flow and system tension using force arrows and color mapping.

Are you facing challenges with ropes and pulleys in your models? **We can help!**

Contact the [Maplesoft Engineering Solutions team](mailto:info@maplesoft.com)