



In order that Modelica is useful for *model exchange*, it is important that libraries of the most commonly used components are available, ready to use, and sharable between applications. For this reason, the Modelica Association develops and maintains a growing *Modelica Standard Library*. Furthermore, other people and organizations are developing free and commercial Modelica libraries. For more information and especially for downloading the free libraries, see <http://www.Modelica.org/library/library.html>.

Currently, component libraries are available in the following domains:

- About 450 type definitions with units, such as Angle, Voltage, Inertia.
- Mathematical functions such as sin, cos, ln
- Continuous and discrete input/output blocks, such as transfer functions, filters, sources.
- Electric and electronic components such as resistor, diode, MOS and BJT transistor
- 1-dim. rotational components such as inertia, gearbox, planetary gear, bearing friction, clutch.
- 3-dim. mechanical components such as joints, bodies and 3-dim. springs.
- Hydraulic components, such as pumps, cylinders, valves.
- Thermo-fluid flow components, such as pipes with multi-phase flow, heat exchangers.
- 1-dim. thermal components, such as heat resistance and heat capacitance.
- Power system components such as generators and lines.
- Power train components such as driver, engine, torque converter, automatic gearbox.

Example models using the Modelica libraries

