# Special Topics of Mechatronics - Inverted Pendulum

### **Prepare Simscape Multibody Simulation**

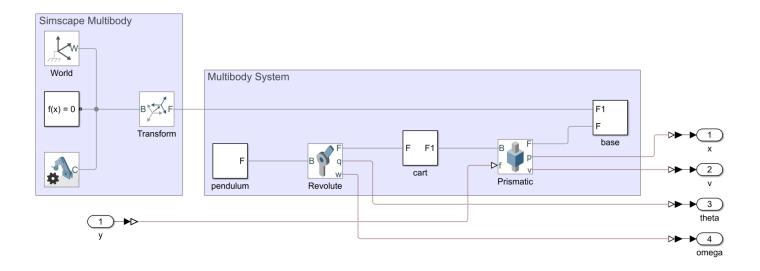
Import CAD files, created by Simscape Multibody Link, via Command Window:

```
smimport('invertedPendulum'); % .xml-file
```

Run invertedPendulum\_DataFile.m, generated by the smimport-function, to load CAD parameter.

The data in this file sets the block parameter values in the Simscape Multibody model.

```
inverted_pendulum_DataFile;
```



### **Prepare Simscape Multibody Simulation**

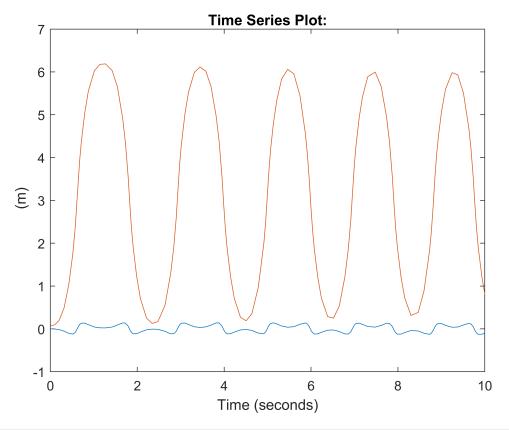
(overwrite some of the invertedPendulum\_DataFile.m params)

#### **Run Simulation**

```
filename = 'free_system.slx';
%open(filename);
sim_data = sim(filename);
```

## **Show timeseries plots**

```
plot(sim_data.find('x'));
hold on;
plot(sim_data.find('theta'));
hold off;
```



```
plot(sim_data.find('v'));
hold on;
plot(sim_data.find('omega'));
```

