Modellierung hybrider Systeme mit Stateflow: Praktikum 3
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# 1 Start einer zweistufigen Rakete

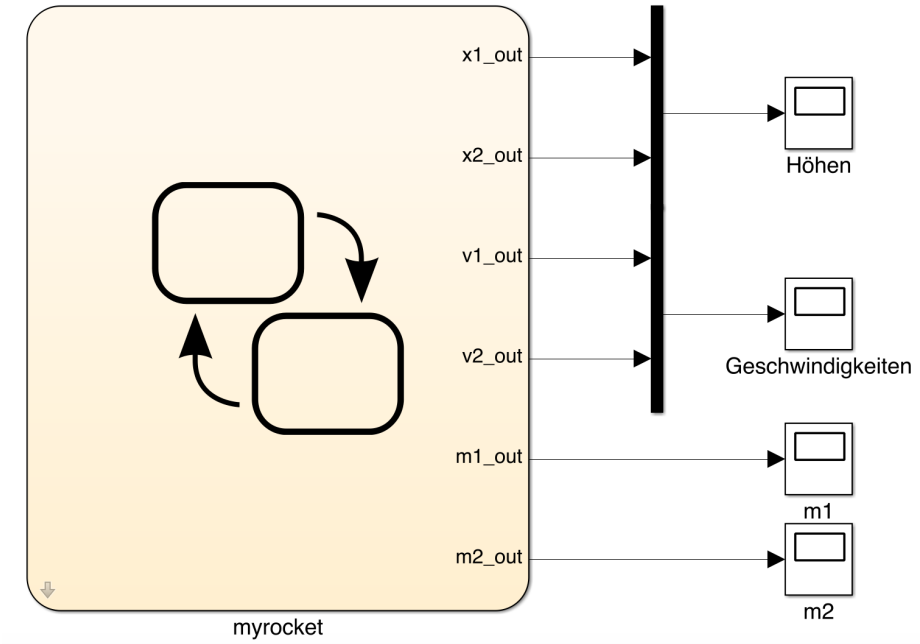


Abbildung 1: Simulink Stateflow

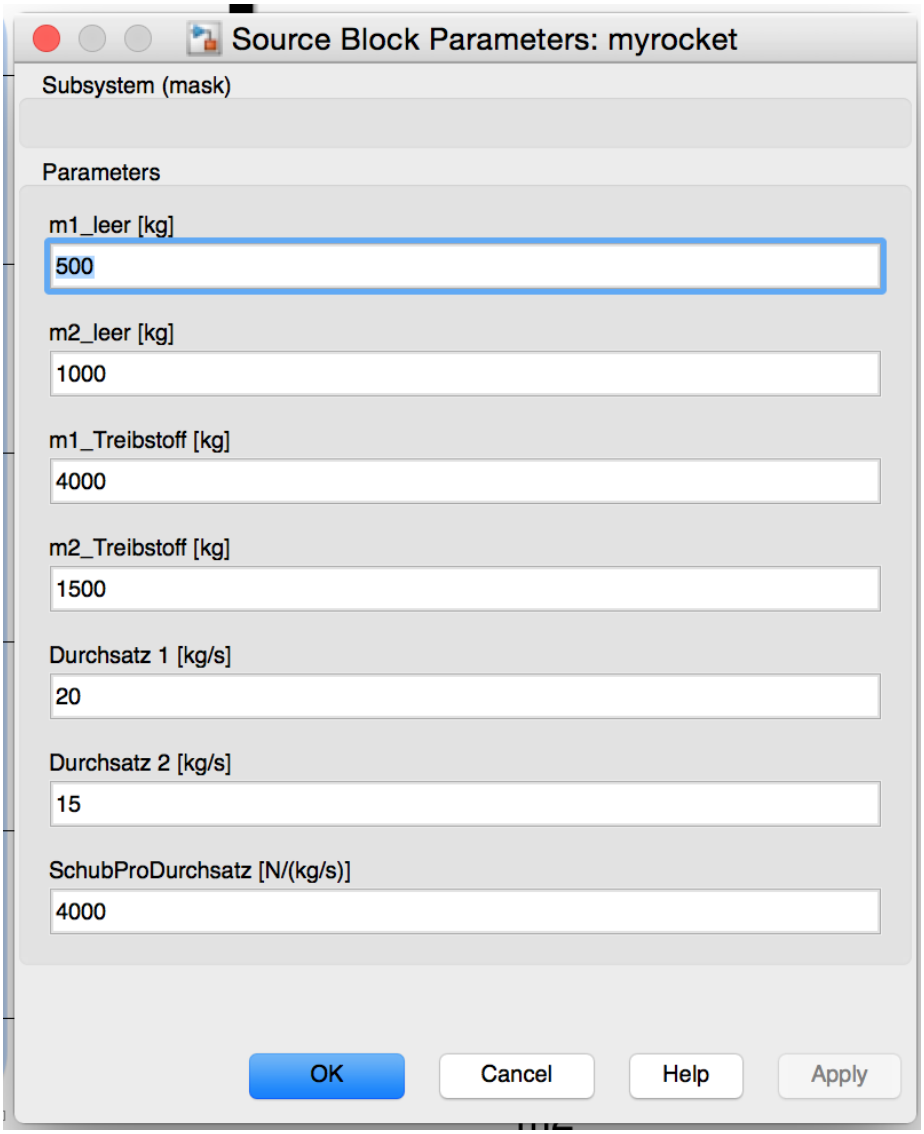


Abbildung 2: Simulink Stateflow

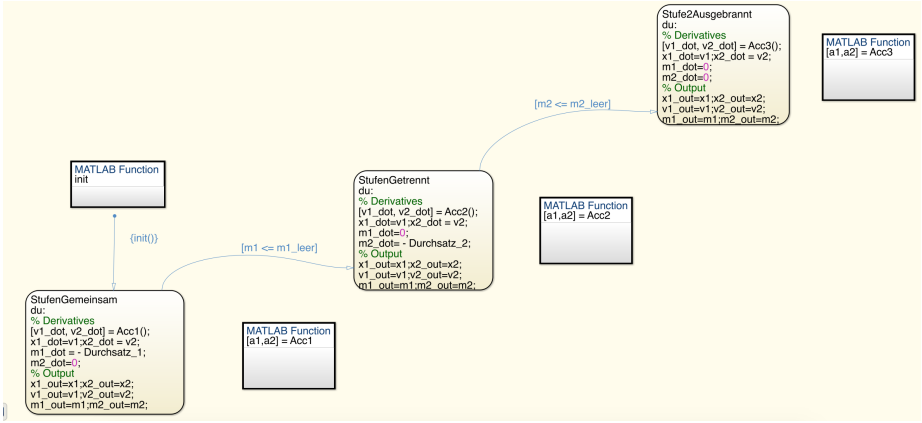


Abbildung 3: Simulink States

$$
\begin{aligned}
Acc1 = & \qquad (1)\\
mR &= m1 + m2\\
r1 &= x1 + rE\\
Fs1 &= G * (mE * mR)/(r1 * r1)\\
Schubkraft_1 &= Durchsatz_1 * SchubProDurchsatz\\
a &= (Schubkraft_1 - Fs1)/(m1 + m2)\\
a1 &= a\\
a2 &= a
\end{aligned}
$$

$$
\begin{aligned}
Acc2 = & \qquad (2)\\
r1 &= x1 + rE\\
Fs1 &= G * (mE * m1)/(r1 * r1)\\
r2 &= x2 + rE\\
Fs2 &= G * (mE * m2)/(r2 * r2)\\
Schubkraft_2 &= Durchsatz_2 * SchubProDurchsatz\\
a1 &= -Fs1/m1\\
a2 &= (Schubkraft_2 - Fs2)/m2
\end{aligned}
$$

$$
\begin{aligned}
Acc3 = & \qquad (3)\\
r1 &= x1 + rE\\
Fs1 &= G * (mE * m1)/(r1 * r1)\\
r2 &= x2 + rE\\
Fs2 &= G * (mE * m2)/(r2 * r2)\\
a1 &= -Fs1/m1\\
a2 &= -Fs2/m2
\end{aligned}
$$

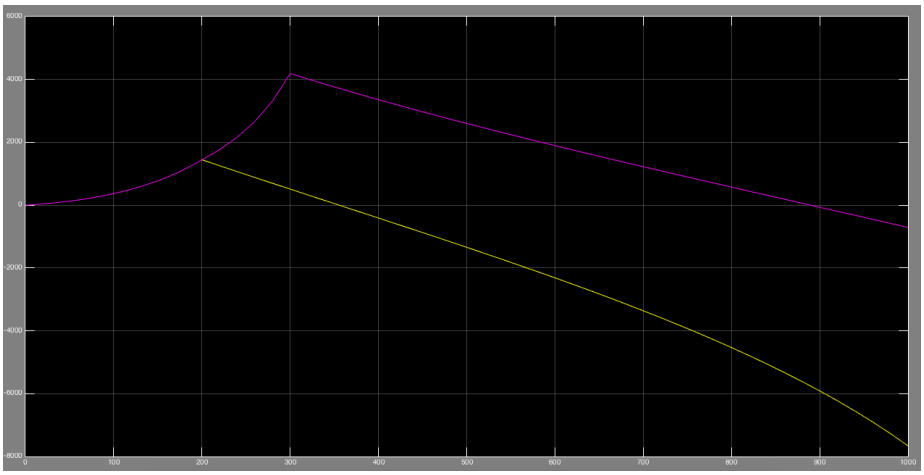


Abbildung 4: Geschwindigkeiten

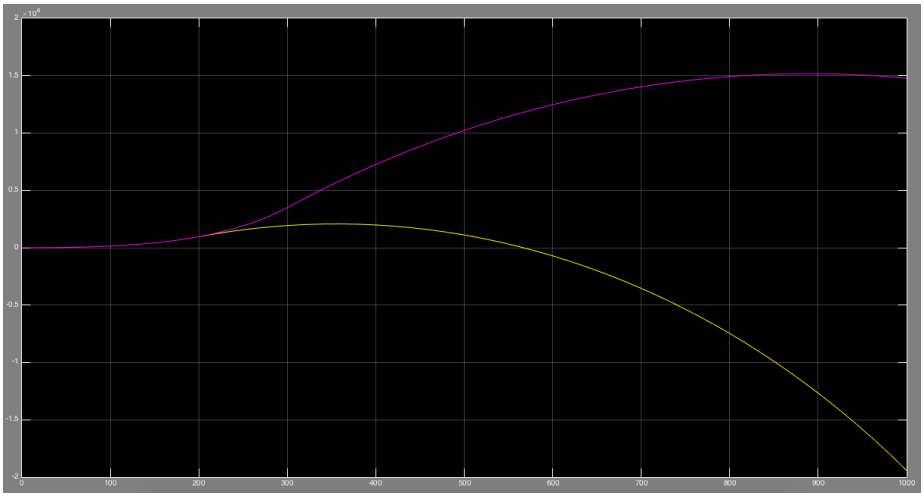


Abbildung 5: Höhen

# 2 Simulation eines schiefen Flippers