

l_s : no movement
 l_v : no movement

$$l_{max} = 2v_1 + l_s$$

$$l_{max} = 2v_1 + 2v_2 + l_s$$

$$\left. \begin{aligned} l_{min} &= 2v_2 + l_s \\ l_{max} &= 2v_1 + l_s \end{aligned} \right\} v_2 \leq v_1$$

System state vector known

