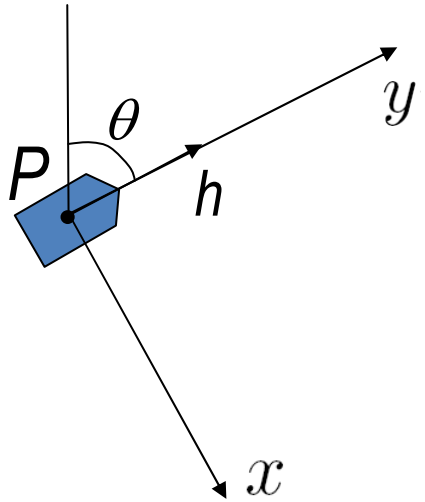
Reeds-Shepp´s car as pursuer *P*

J. A. Reeds and L. A. Shepp (1990). Optimal paths for a car that goes both forwards and backwards. Pacific J. Math., Vol. 145, N° 2, 367–393.

$$\dot{x}_p = w \sin\theta$$
$$\dot{y}_p = w \cos\theta$$
$$\dot{\theta} = u, \qquad |u| \leqslant 1, \ |w| \leqslant 1$$



p. 373: "…for slowly moving vehicles, such as carts, this seems like a reasonable compromise to achieve tractability".

$$\dot{x} = -yu + v_x$$
$$\dot{y} = \ xu - w + v_y$$
$$|u| \leqslant 1, \ w \in [-1, 1], \ v = (v_x, v_y)', \ |v| \leqslant \nu$$

$$w \in [a, 1]$$