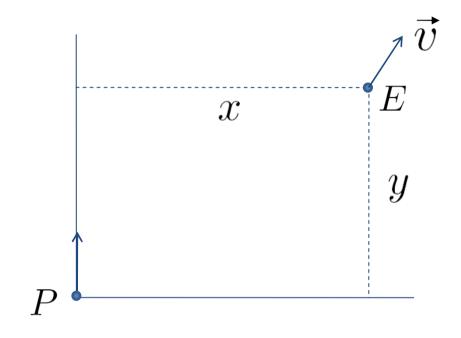# Dynamics in reduced coordinates

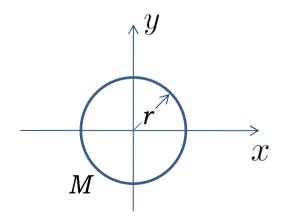$$\dot{x} = -yu + v_x$$
$$\dot{y} = \phantom{-}xu + v_y - 1$$
$$|u| \leqslant 1, \quad |v| \leqslant \nu$$



**Classical problem**



**Parameters of the problem**

$$\nu, \ r$$