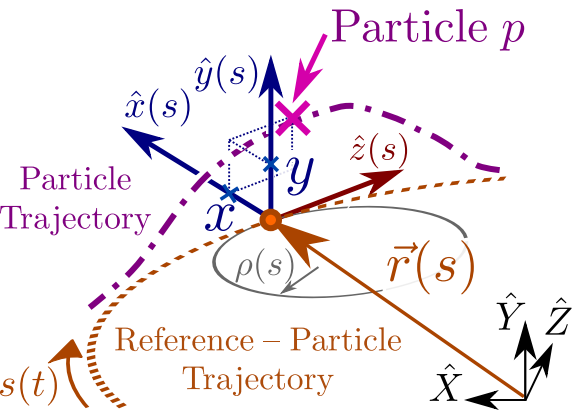
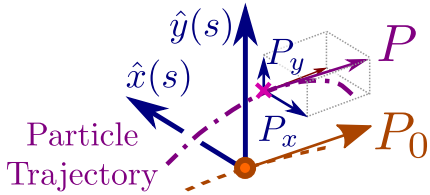


$P \ldots$ momentum of p

$P \equiv (P_x, P_y, P_s)$

$(P \cdot c) = \beta \cdot E$ with $\beta = v/c$

$P_0, \beta_0, E_0 \ , \ldots$ Ref. Particle



4 Transversal Coord.

$$x, p_x = P_x/P_0,$$
$$y, p_y = P_y/P_0$$

2 Longitudinal Coord.

$$\zeta = \beta \cdot (s/\beta_0 - c \cdot t)$$
$$\delta = (P - P_0)/P_0$$