Navigation and Contour Estimation of Zigzag Tunnel With Swiping Policy and Tunneling Policy

$\bar{d} \pm \sigma_d = 1 \pm 2 \, \text{mm}$
$\bar{d}_{\text{axis}} \pm \sigma_{d_{\text{axis}}} = 7 \pm 7 \, \text{mm}$

Reference Contour
$C_{\text{ref}} = \{\mathbf{x}_i\}_{i=1}^{N}$
Estimated Contour
$C_{\text{est}} = \{\mathbf{y}_i\}_{i=1}^{N}$
$d_i = \|\mathbf{x}_i - \mathbf{y}_i\|$
for $|d_i - \bar{d}| \leq \sigma_d$
for $|d_i - \bar{d}| > \sigma_d$
Tunnel Axis
$C_{\text{axis}} = \{\mathbf{a}_i\}_{i=1}^{N}$
Platform Trajectory
$C_{\text{pl}} = \{\mathbf{p}_i\}_{i=1}^{N}$
$d_{\text{axis},i} = \|\mathbf{p}_i - \mathbf{a}_i\|$
× Entry Point
× Exit Point