Robot Control

$v_1 = D_1 V(1 + \alpha / 90°)$

$v_1 = D_1 V(1 + \alpha / -90°)$

(x_1, y_1)

$a = y_0 - y_1$

$c = \sqrt{((x_0 - x_1)^2 + (y_0 - y_1)^2)}$

α

(x_0, y_0)

$D_i =$
$\alpha < 5° : 1$
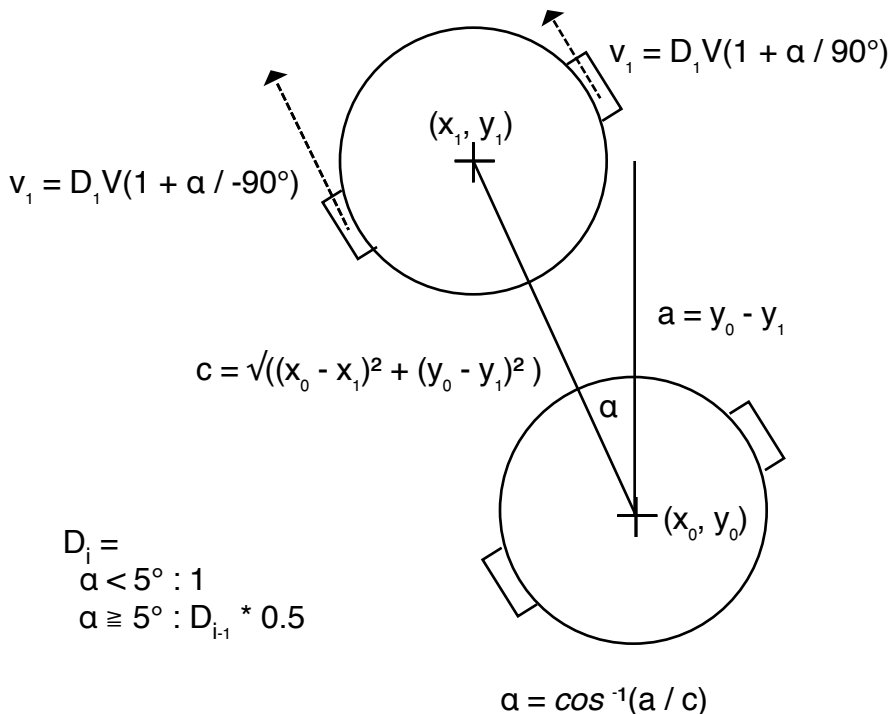$\alpha \geq 5° : D_{i-1} * 0.5$

$\alpha = cos^{-1}(a / c)$

a is the intended trajectory, *c* is the traveled trajectory, *α* is the divergence angle. *V* is the base speed constant and D_i is a decay function for avoiding oscilation in the robot's control. The coordinate system is aligned to the intended trajectory.