

Vicsek Model - 2D

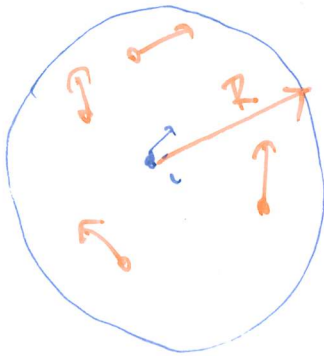
dist. travelled
update step

old direction.

new
position

$$\rightarrow X_i(t+1) = X_i(t) + \underbrace{v_0}_{\text{old position}} \cos(\theta_i(t)) \rightarrow t+1.$$

$\theta_i(t+1)$ = average angle of particles
within radius R from particle i .



$$+ \eta \cdot \text{rand}[0, 2\pi]$$

error
parameter
 $\epsilon \in [0, 1]$
↑
no randomness

noise