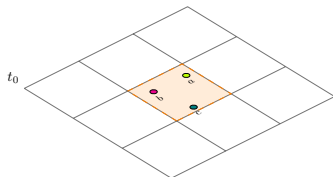# PFLOCK Report

Andres Calderon
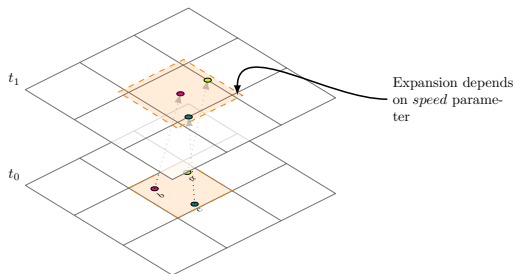
University of California, Riverside

October 25, 2019
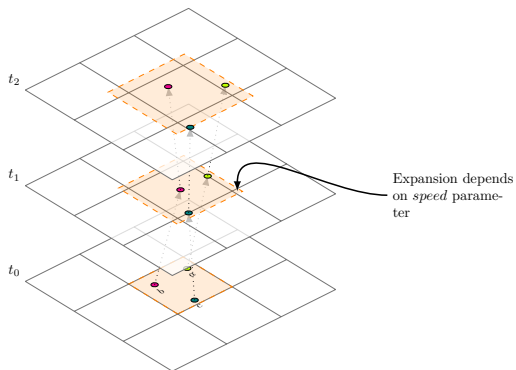
# Alternative 1

# Alternative 1



Expansion depends on *speed* parameter
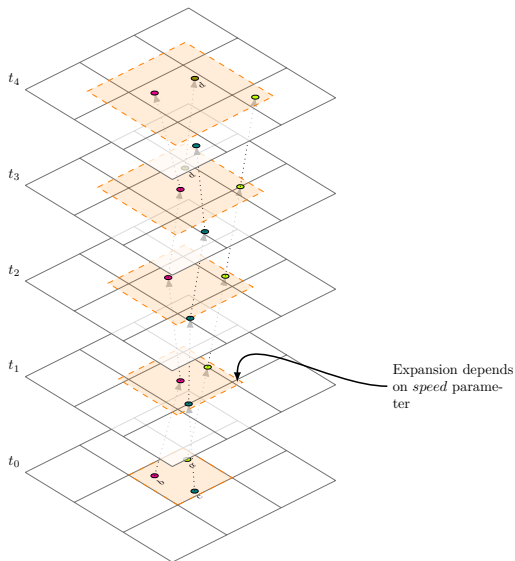
# Alternative 1



$t_2$

$t_1$

$t_0$

Expansion depends on *speed* parameter

# Alternative 1



Expansion depends on *speed* parameter

# Alternative 1



Expansion depends on *speed* parameter
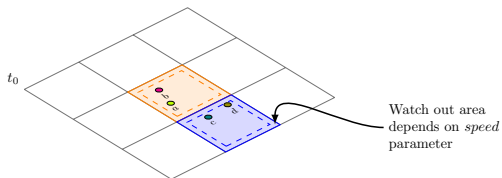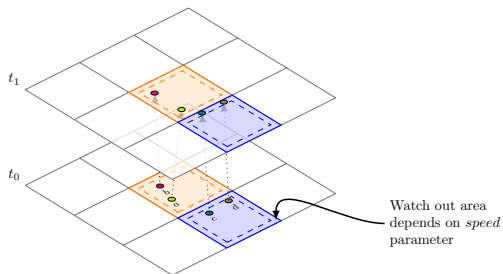
## Alternative 1

▶ Each partition expands according to the `speed` parameter, so it will have the information of all the trajectories which start on it.

▶ Flocks $a$ and $b$ start in the partition $(1,1)$. Flock $a$ starts and ends inside of the partition. Flock $b$ leaves the partition but remains inside the expansion area. Both will be reported.

▶ Flock $c$ starts in the partition $(1,1)$ but leaves the expansion area at time 3. It will not be reported.

▶ Even flock $d$ starts and end in partition $(1,1)$, it will not be reported because it did not begin at the start of the window (it does not meet the $\delta$ parameter).
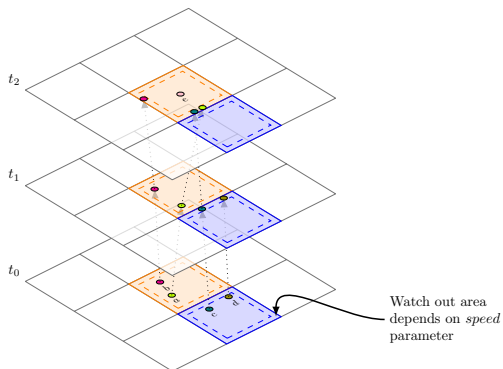
# Alternative 2



Watch out area depends on *speed* parameter

# Alternative 2



Watch out area depends on *speed* parameter

# Alternative 2



Watch out area depends on *speed* parameter

# Alternative 2



$t_3$

$t_2$

$t_1$

$t_0$

Watch out area
depends on *speed*
parameter

# Alternative 2



Watch out area depends on *speed* parameter
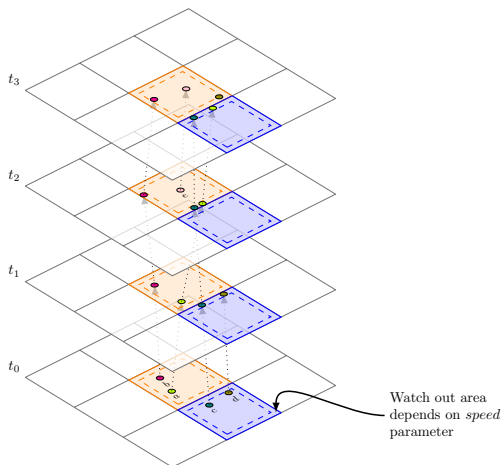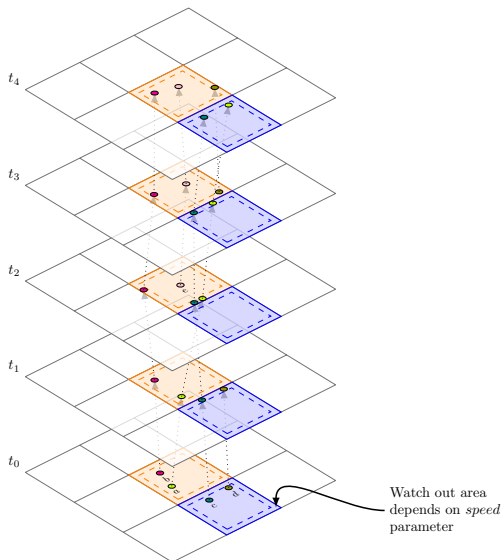
## Alternative 2

▶ Each partition is divided into "watch out" and "safe" area according to the speed parameter.

▶ Each partition remains fixed and it will report flocks which start and end inside of it if they meet the $\delta$ parameter (i.e. partition $(1,1)$ will report flock $b$ but not flock $e$).

▶ Each partition has to report flocks if they start or end on its "watch out" area. They must be post-processed to check it they can be concatenated.

# Alternative 2

▶ For example, for flocks $a$, $c$ and $d$ we have:

| Partition (1,1) | Partition (1, 0) | Concat |
|---|---|---|
| $a_{t_0-t_2}$ | $a_{t_3-t_4}$ | $a_{t_0-t_4}\checkmark$ |
| $c_{t_2-t_2}$ | $c_{t_0-t_1}$ | $c_{t_0-t_4}\checkmark$ |
| | $c_{t_3-t_4}$ | |
| $d_{t_3-t_4}$ | $a_{t_0-t_1}$ | $\times$ |