PFLOCK Report

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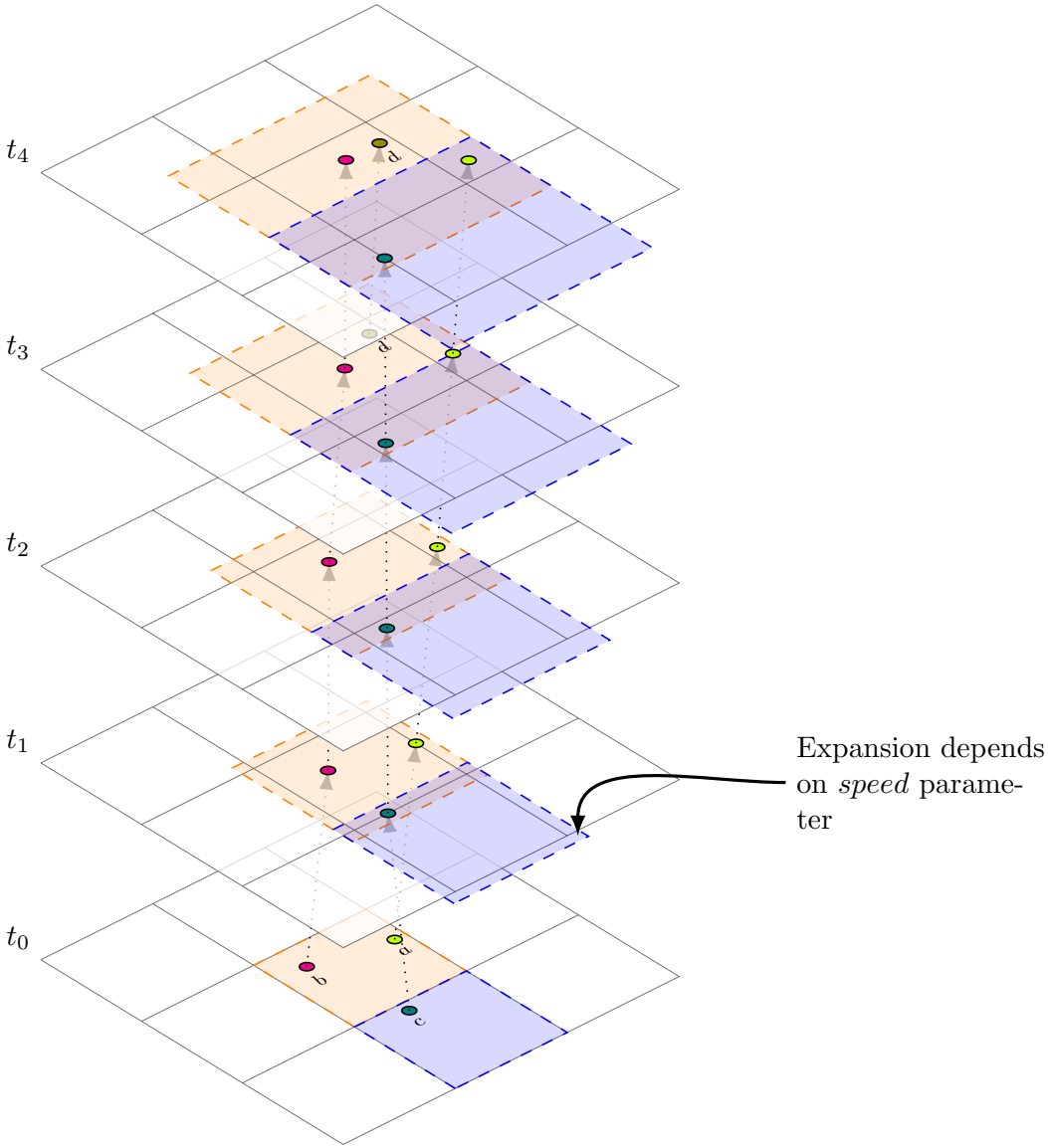
Alternative 1

- For each partition:
  - Group by Trajectory ID (*tid*).
  - Find Trajectories ID (*tids*) of the neighbors of *tid* in disks through timestamps (ICPE approach).
  - Find maximal frequent patterns from *tids* with $minsup = \delta$.

Alternative 1

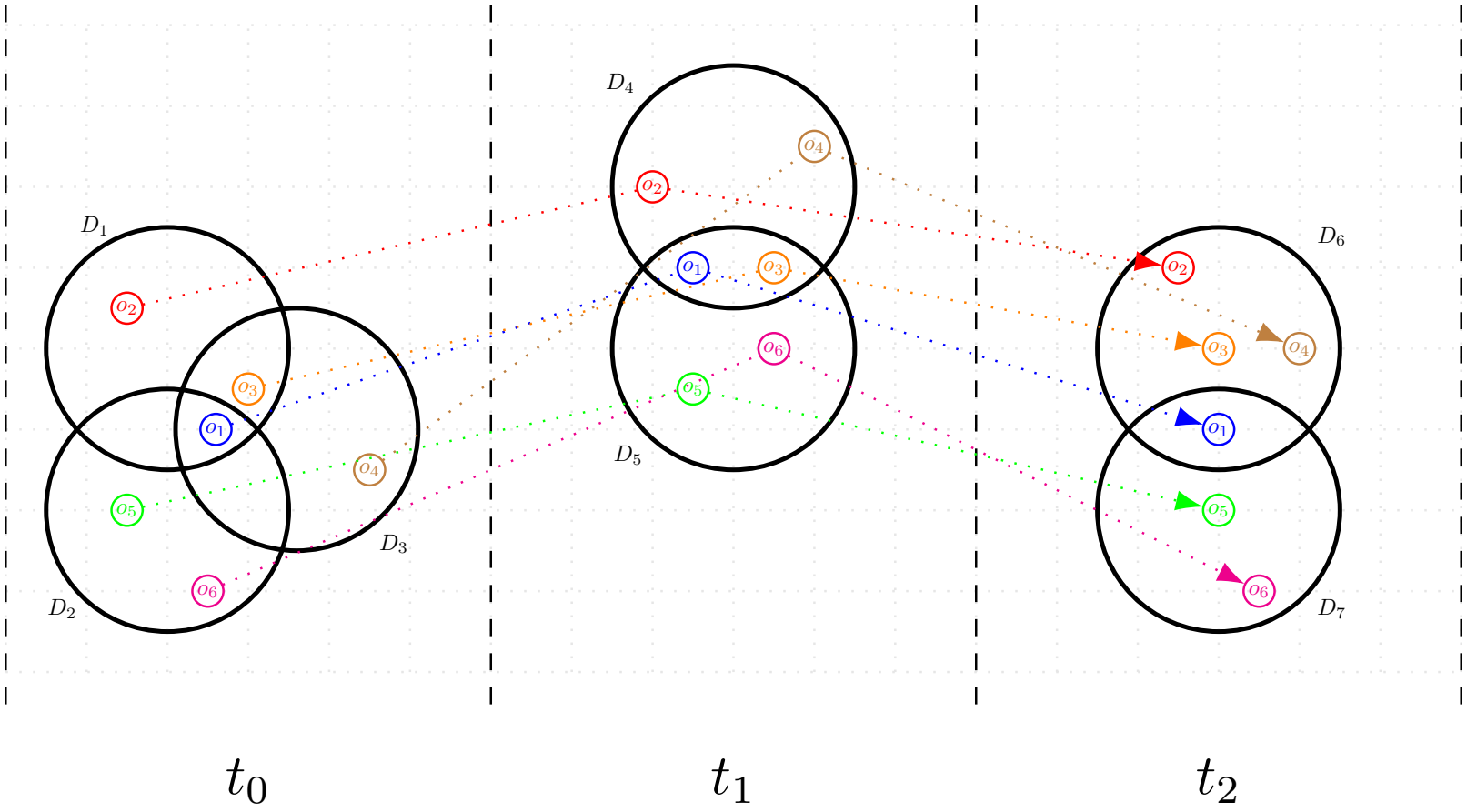


Demo 1

Flock	Items
a	1 2 3
b	4 5
c	6 7 8

Partition	Trajectory ID	Neigbours					Pattern
1	6	$\{7,8\}_{t_0}$	$\{7,8\}_{t_1}$	$\{7,8\}_{t_2}$	$\{7,8\}_{t_3}$	$\{7,8\}_{t_4}$	[7 8: 5]
	7	$\{8\}_{t_0}$	$\{8\}_{t_1}$	$\{8\}_{t_2}$	$\{8\}_{t_3}$	$\{8\}_{t_4}$	[8: 5]
	8	$\{\}_{t_0}$					
4	1	$\{2,3\}_{t_0}$	$\{2,3\}_{t_1}$	$\{2,3\}_{t_2}$	$\{2,3\}_{t_3}$	$\{2,3\}_{t_4}$	[2 3: 5]
	2	$\{3\}_{t_0}$	$\{3\}_{t_1}$	$\{3\}_{t_2}$	$\{3\}_{t_3}$	$\{3\}_{t_4}$	[3: 5]
	3	$\{\}_{t_0}$					
	4	$\{5\}_{t_0}$	$\{5\}_{t_1}$	$\{5\}_{t_2}$	$\{5\}_{t_3}$	$\{5\}_{t_4}$	[5: 5]
	5	$\{\}_{t_0}$					

Demo 2



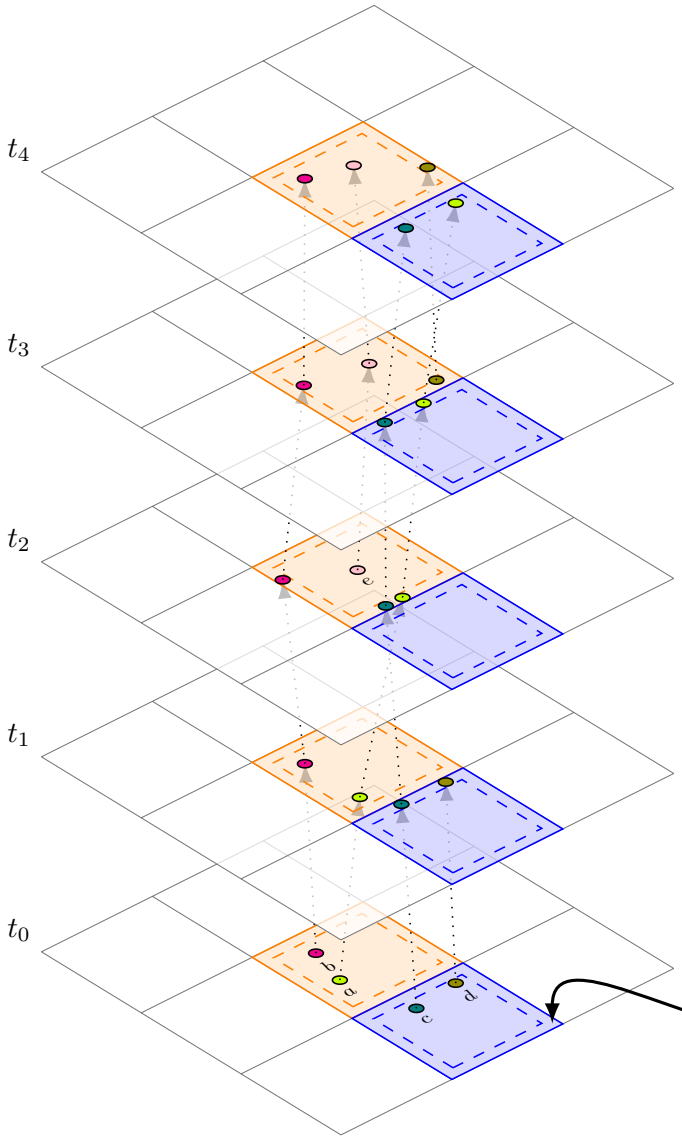
Demo 2

Partition	Trajectory ID	Neigbours			Pattern
0	1	$\{5,6\}_{t_0}$	$\{2,3,4\}_{t_1}$	$\{2,3,4\}_{t_2}$	[5 6: 3]
		$\{3,4\}_{t_0}$	$\{3,5,6\}_{t_1}$	$\{5,6\}_{t_2}$	[3 4: 3]
		$\{2,3\}_{t_0}$			[2 3: 3]
	2	$\{3\}_{t_0}$	$\{3,4\}_{t_1}$	$\{3,4\}_{t_2}$	[3: 3]
	3	$\{4\}_{t_0}$	$\{4\}_{t_1}$	$\{4\}_{t_2}$	[4: 3]
			$\{5,6\}_{t_1}$		
	4	$\{\}_{t_0}$			
	5	$\{6\}_{t_0}$	$\{6\}_{t_1}$	$\{6\}_{t_2}$	[6: 3]
	6	$\{\}_{t_0}$			

What is next?

- Check if patterns are found per row or per partition.
- Deal with possible redundant among partitions.
- Test Alternative 1 with more data.
- Explore Alternative 2.

Alternative 2



Watch out area depends on *speed* parameter

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