Algorithmique Répartie

Jeremy Krebs - Guillaume Soulié

Université Paris Saclay

8 novembre 2017

Motivations :

Related work :

There are a few hypotheses on the robots :

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- Global-Strong Multiplicity Detection

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- Global-Strong Multiplicity Detection
- Local-Strong and Global-Weak Multiplicity Detection

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ASYNC Asynchronous - The robots are activated/executed asynchronously

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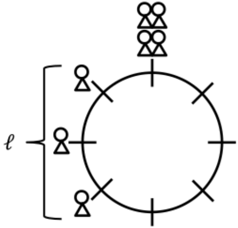

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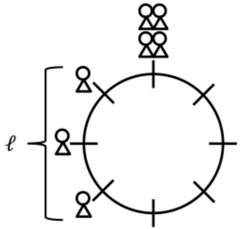

Set formation problem : The goal of the set formation problem is to gather the robots in a specific predefined configuration.

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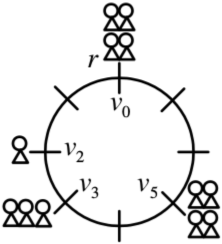

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- If there are multiple candidates, find a way to make, in expectation, exactly one of them move
- **Take care !** The scheduler is an enemy and will activate the robots in the worst way.

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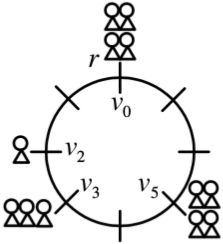
- **The scheduler is an enemy !**
- Less than M(C) nodes should move in the same direction !

Case 2 There are multiple such nodes :



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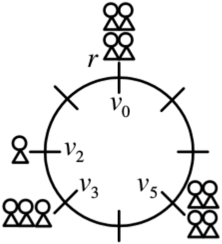

Take h_{min} the minimal distance between a M(C)-robot node and a neighboring robot node. Take V the set of nodes at distance h_{min} of a M(C)-node and R the robots on these nodes.

Cas 2.1 $|R| = 1$ - This robot gets to his closer M(C)-robot node.

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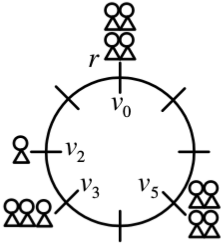

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In order to go further we could :

- Find the problems we can solve with weaker hypotheses,
- Work with a weaker scheduler, like an oblivious one,
- Work with a more complex graph than a ring.