

Coordinated and Collective Movements

Distributed Intelligent Systems

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Alexander Bahr

The lab includes 3 parts:

- 1- Reynolds flocking
- 2- Robust formation control
- 3- graph-based formation control

1- Reynolds flocking in Webots

- No leader/follower.
- You will study the impact of various parameters on the flock.
- Three different localization systems:
 - Absolute
 - Local and inaccurate (odometry)
 - Range and bearing.
- The performance is just an estimate (not very reliable).

2- Leader-follower robust formation in Webots

- The leader is controlled by your arrow-keys.
- Note the differences between flocking and formation.

3- Graph-based formation in Matlab

- No leader/follower
- Try to understand how the Laplacian controller works
- Play with the parameters and note their effects.

Notes

- The lab is a bit long, it may take time (even more than 3 hours), don't get stuck.
- **Remember to fill the feedback form**