Multiple Drones Systems

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1 Motion planning

Inter-collision avoidance Baca et al. (2018) `https://www.youtube.com/watch?v=pmZZzIXIIsc` `https://www.youtube.com/watch?v=rJfQncmWpCo\&feature=youtu.be` show application of monocular vision in even tight formations.

2 Trajectory tracking

Baca et al. (2018)

Algorithms

Using both a linear model predictive controller (MPC) and non-linear state feedback Baca et al. (2018)

3 Formation Control

Alonso-Mora et al. (2018) Alonso-Mora et al. (2017)

Leader-follower

Flocking Three rules of Flocking (Reynolds, 1987)

- separation at short-range to avoid collisions
- local interactions (alignment rules) for aligning velocity vectors
- long-range attraction of individuals to keep the group flight together
- consensus-based flocking

4 Self-assemble

Saldana et al. (2018)

5   Localization

Kalman filter and Particle filter

GNSS-based state estimation   Spurny and Thomas (2017)

Light-based   Walter et al. (2018)

6   Cooperative Search

Spurny and Thomas (2017)

7   Cooperative navigation

Spurny and Thomas (2017)

8   Simulators

See footnote URL [1]

9   Communication

References

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[1]`https://github.com/abhijitmajumdar/Quadcopter_simulator`

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