Distributed parameter systems with applications to multi-agent systems

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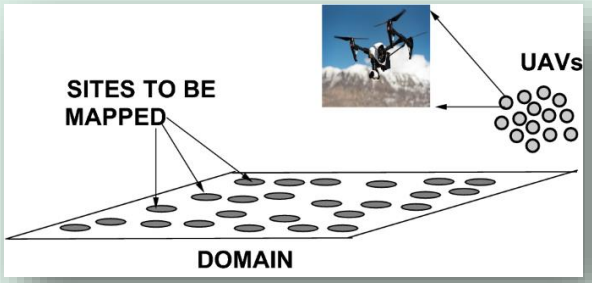
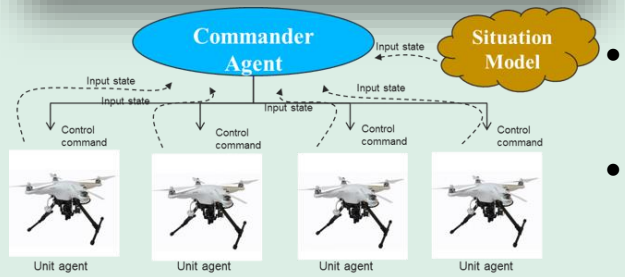
Introduction



Multi-agent deployment onto smooth surfaces in the plane\space



- Few leaders and many followers
- Communication described by a graph

Applications

Mathematical model

Number of agents is large:

Discrete dynamics

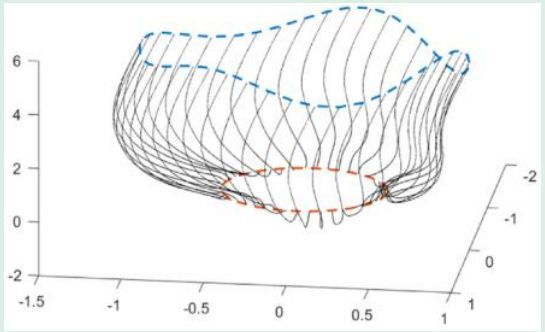
- Finite dimensional (ODE)
- Laws of motion

Continuous dynamics

- Infinite dimensional (PDE)
- Distributed param. sys.

My research

Design control algorithms (laws) which achieve desired deployment based on DPS formulation



Challenges – Communication protocols, known\unknown delays (network), Packet dropouts, quantization, etc.