Non-Orthogonal Multiple Access for Unmanned Aerial Vehicle (UAV) Communications

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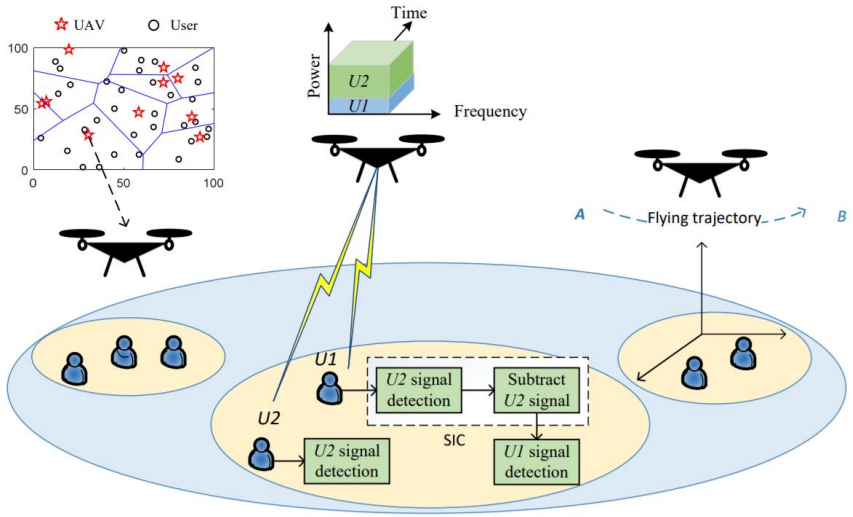
NOMA Aided UAV Networks

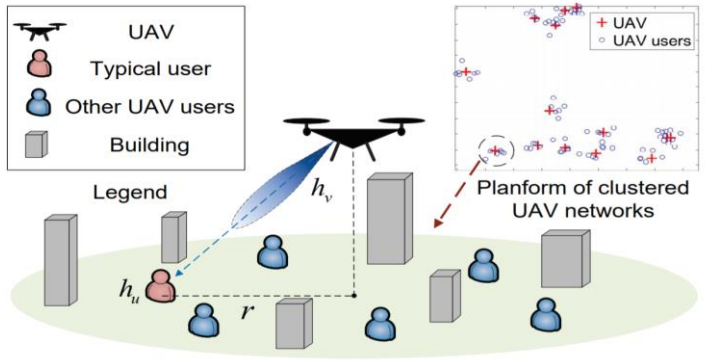


Characteristics of UAV Networks: [1]

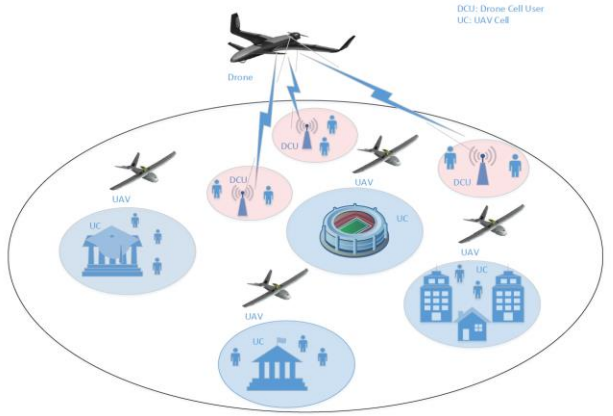
- **Path loss**: both line-of-sight (LOS) and non-line-of-sight (NLOS) links need to be considered.
- **Mobility**: When a UAV flies around, the coverage areas becomes various.
- **Agility**: Based on the real-time requirements from the users, UAVs can be deployed quickly and their positions can be adjusted within a 3D space flexibly.

Invoke NOMA Techniques for Enhancing Massive Connectivity.

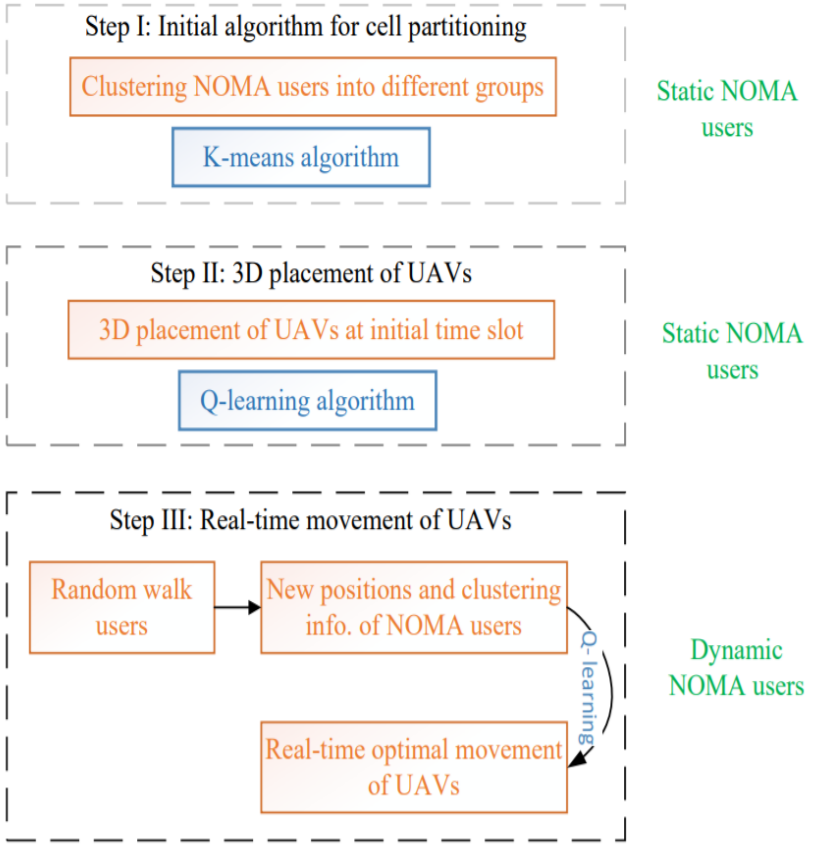
Proposed Stochastic Geometry Model



Resource Allocation and Trajectory Design for NOMA-UAV



Invoke Machine Learning for NOMA-UAV



Three-step machine learning based UAV placement and movement design in NOMA-aided networks.

[1] Y. Liu, *et al*. "UAV Communications Based on Non-Orthogonal Multiple Access", IEEE Wireless Communications; accept to appear.