

# A Survey of UAV Clustering Algorithm

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**Abstract**—As a rapidly developing emerging technology, unmanned aerial vehicles (UAVs) have attracted widespread attention in academic research, military applications, and civilian use. Close collaboration among multiple UAVs to form UAV clusters can be used to accomplish various missions in complex and unique environments. Therefore, it is gradually becoming an essential form of current UAV combat applications. However, the high mobility, frequent topology changes, and limited energy of UAVs bring challenges to the communication design of UAVs, and how to manage them to work efficiently has become a problem to be solved in UAV clusters. The extant literature shows that the above problems can be solved by an effective clustering approach, thus effectively improving the performance of large-scale UAV clusters. This paper first introduces different existing clustering algorithms in UAV clusters, then provides a comparative analysis of the different clustering algorithms, and finally, discusses future research directions for clustering algorithms in UAV cluster communication.

**Keyword**—clustering; cluster head selection; FANET; UAV cluster;



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