

This technical note investigates distributed containment control for a single-integrator continuous-time multi-agent system with a limited communication data rate. Network topology is a directed communication graph. The containment control with quantized communication for each follower is designed using only its neighbour's quantized information so that all followers move into the convex hull spanned by the leaders. Necessary and sufficient criteria which guarantee achievement of containment consensus are given if the communication data rates are unfixed or fixed. Under a given bound on communication data rate, an algorithm is established to achieve the containment consensus. Finally, all the theoretical results are illustrated by numerical simulations.