



SIMULATION AND EXPERIMENTAL STUDY OF CONSENSUS ALGORITHMS FOR MULTIPLE MOBILE ROBOTS WITH INFORMATION FEEDBACK

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ABSTRACT—In this paper, we study the problem of consensus building in multi-robot systems with information feedback. We show how information feedback can be incorporated into the consensus building process so as to improve the robustness and situational awareness of the whole team. We detail the strategies of introducing feedback to the consensus building process through information flow, time-varying weights, external feedback terms, and reference states, and perform simulations and experimental studies of these strategies.

Key Words: Consensus building; Distributed robotics; Multi-robot systems; Cooperative control