

An overview of the consensus problem in the control of multi-agent systems

ABSTRACT

As a solution to the distributed multi-agent coordination, the problems of consensus or agreement have been widely explored and studied in the literature. This document provides an overview of consensus problems in multi-agent cooperative control with the goal of exposing the related literature and promote the research in this area. The document presents the theoretical results concerning the search for consensus in the involved topologies with information exchange that is invariant in time and change dynamically. Applications related to consensus protocols are studied for the cooperation of multi-agent systems. The presentation includes as well open problems and offers future research direction.

Keyword: Consensus problem; Multi-agent systems; Nonlinear consensus; Linear consensus