عنوان مقاله:

Design of non-cooperative and centralized LMS based adaptive networks with Desired Mean-Square Deviation for estimation of the unknown parameter

محل انتشار:

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خلاصه مقاله:

Adaptive networks have been proposed to solve the problem of linear estimation in a different mode of cooperation. Among the adaptive networks, the no cooperation mode is easy to implement centralized based networks offer good estimation performance. The goal of this paper is to design no cooperation and centralized least-mean-squares (LMS) adaptive networks with predefined performance in estimation problems without power and communication constraints. Particularly, under small step-sizes and some conditions on the data, we assign the step size parameter at any node in no cooperation mode in a way that the steady-state value of mean square deviation (MSD) in network becomes smaller than a desired value. In centralized mode of LMS based adaptive networks, we assign the step size parameter for fusion center that becomes smaller than a desired value. In both methods, the step-size is adjusted for each node according to its measurement quality which is stated in terms of observation noise variance. Also we discuss the number of nodes required for achiveing predefined performance and node failure effect that is modeled with pure noise in a centralized based network. Simulation results are included to show the performance of the proposed algorithms

کلمات کلیدی:

Adaptive networks, least mean square (LMS) algorithm, non-cooperative mode, centralized mode, mean square (deviation (MSD

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