

Improved performance in distributed estimation by convex combination of DNSAF and DNLMS algorithms

ABSTRACT

In diffusion estimation of distributed networks two characteristic parameters are crucial, the speed of convergence and steady-state error. Diffusion normalized least mean square (DNLMS) algorithm has low misadjustment error, but it is slow in convergence. On the contrary, the diffusion normalized subband adaptive filter (DNSAF) algorithm has faster convergence than DNLMS, but final steady-state error is higher. In this paper, the overall performance is improved by combining these algorithms. Convex combination of DNLMS / DNSAF has a quick convergence rate and little steady-state error. The introduced algorithms execute tracking more effectively than traditional algorithms, in addition. We use a number of experimental findings to show how well the suggested method performs.