A SET–MEMBERSHIP APPROACH TO NORMALIZED PROPORTIONATE ADAPTATION ALGORITHMS (TueAmOR12)

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Abstract : Proportionate adaptive filters can improve the convergence speed for the identification of sparse systems as compared to their conventional counterparts. In this paper, the idea of proportionate adaptation is combined with the framework of set–membership filtering (SMF) in an attempt to derive novel computationally efficient algorithms. The resulting algorithms attain an attractive faster converge for both situations of sparse and dispersive channels while decreasing the computational complexity due to the data discerning feature of the SMF approach. Simulations show good results in terms of reduced number of updates, speed of convergence, and final mean–squared error.

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