Adaptive Forgetting Factor RLS Algorithm Based on Gradient of Inverse Correlation Matrix Applied to Human Motion Analysis

This paper is concerned with studying the forgetting factor of the recursive least square (RLS). A new dynamic forgetting factor (DFF) for RLS algorithm is presented. The proposed DFF-RLS is compared to other methods. Better performance at convergence and tracking of noisy chirp sinusoid is achieved. The control of the forgetting factor at DFF-RLS is based on the gradient of inverse correlation matrix. Compared with the gradient of mean square error algorithm, the proposed approach provides faster tracking and smaller mean square error. In low signal-to-noise ratios, the performance of the proposed method is superior to other approaches.

Forgetting factor, RLS, Inverse correlation matrix, human motion analysis.

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