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# Online Estimation of Parameters for Discrete-Time Independent Normal Random Variables Summation Process Observed with Noise

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The linear dynamical system (LDS) model is used ubiquitously in practical applications. However, the problem of system identification for the LDS model is currently better solved offline than online, which suggests that further improvements need to be made in terms of solving such a problem in the online case. In this work, we propose an algorithm for the online estimation of parameters for discrete-time independent normal random variables summation process observed with noise, which is a special case of the LDS model. The algorithm uses maximum likelihood estimation in combination with a certain parametrization of unknown model parameters and Taylor series approximation, and may provide insight into the online solution of the system identification problem for the general LDS model.