عنوان مقاله:

The Performace of SSLS and MMSE Estimators on TheNakagami-m Fading MIMO Channels

محل انتشار:

نویسنده:

Hamid Nooralizadeh - Department of Electrical Engineering, Islamshahr Branch, Islamic Azad University, Islamshahr, Iran

خلاصه مقاله:

Nakagami-m fading multiple-input multiple-output (MIMO) channel estimation is an important challenge. It is almostimpossible to provide the probability density function (pdf) for a Nakagami distribution random vector, especially, withcorrelated elements, and closed-form classical and/or Bayesian estimators for a linear MIMO model. Fortunately, thereis a relationship between the Rice factor and the Nakagami shape parameter, and it has been numerically studied in thispaper. The performance of shifted scaled least squares (SSLS) and minimum mean square error (MMSE) channelestimators is investigated in MIMO Nakagami-m frequency-flat fading channels using the mentioned relationship. It isshown that the performance of both SSLS and MMSE estimators improves when the Nakagami shape parameterincreases. Also, it is seen that the MMSE estimator outperforms the other one, especially, in the case of high correlation.Numerical results confirm that the proposed estimators are appropriate method for Nakagami-m fading MIMO channelestimation.

کلمات کلیدی:

Nakagami-m fading; Rician fading; shifted scaled least squares; minimum mean square error.

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