Perturbation Estimates for the Maximal Solution of the Matrix Equation $X + \sum_{i=1}^{m} A_i^* X A_i = Q$

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In this paper we investigate the nonlinear matrix equation

$$X + \sum_{i=1}^{m} A_i^* X A_i = Q \tag{1}$$

Motivated by the works [1], we generalize results on the perturbation estimations of the maximal solution of Eq. (1). Moreover, we give perturbation bounds for the matrix coefficients of Eq. (1) for which the perturbation equation has maximal positive definite solution. The results are illustrated by using numerical examples.

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References

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