Convergence Analysis of Block Modified Triangular and Triangular Splitting Method for the Solution of Regularized Linear System-Circulant Matrices

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**Abstract:**

In this paper, the homogeneous system  is transformed to the non homogeneous regularized linear system by introducing small perturbation , and proved that the matrix  is positive definite for The steady state probability vector  of an irreducible circulant rate matrix *Q* is computed, and also obtained the condition for the convergence of unique iterative solution by Block Modified Triangular and Triangular Splitting (BMTTS) method proposed as in the cases of Traingualr and Triangular Splitting (TTS), Triangular and Skew-symmetric Splitting (TSS). Moreover, we prove some properties of circulant matrices. From the numerical results, we conclude that the steady state probability vector of proposed method converges rapidly to unique solution compare to TTS, and Jacobi methods.