

THE THIRD ORDER OF ACCURACY OPERATOR SPLIT OF THE  
EVOLUTION PROBLEM USING PADE APPROXIMATION

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*Abstract*

In the present work, symmetrized sequential-parallel decomposition difference scheme of the third degree precision for the solution of Cauchy abstract problem is offered. Third degree precision is reached by introducing the complex parameter  $\alpha = \frac{1}{2} \pm i \frac{1}{2\sqrt{3}}$ . For the error of the considered scheme, the explicit a priori estimate is obtained.

*Key words and phrases:* Decomposition Method, Splitting Operator, Semigroup, Trotter formula, Cauchy abstract problem, Resolvent Polynomials.

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