

**SPLITTING OF THE MULTI-LAYER SEMI-DISCRETE SCHEME FOR
AN EVOLUTIONARY EQUATION ON TWO-LAYER SCHEMES AND
ERROR ESTIMATION FOR APPROXIMATE SOLUTION USING
THE ASSOCIATED POLYNOMIALS**

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In the present report using the perturbation algorithm the purely implicit three and four-layer semi-discrete schemes for an evolutionary equation reduce to two-layer schemes. An approximate solution of the original problem is constructed by means of solutions of these two-layer schemes. Using the associated polynomials, the estimates of the approximate solution error are proved in the Hilbert space.