

DERIVATION OF BLOCK NYSTRÖM TYPE METHOD WITH ONE-OFF-STEP POINT  
FOR THE SOLUTION OF TWO POINT BOUNDARY VALUE PROBLEMS  
WITH ROBIN BOUNDARY CONDITION

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In this article, we proposed a modified block Nyström type integrators for the numerical solution of boundary value problems with Robin boundary conditions. The proposed method solves the ordinary differential equations (ODEs) directly without reducing the ODE into an equivalent first order system.

The proposed block Nyström method is formulated from its continuous scheme that is constructed from an appropriate power series via collocation and interpolation techniques. The convergence analysis of the proposed method is carried out and it is shown that the method is consistent, zero-stable and convergence. The accuracy of the method is demonstrated by comparing with existing method found in the literature. Other form of problems associated with initial value problem can be solved by adjusting the boundary condition in the algorithm.