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Olushey A Akinfenwa* (akinolu35@yahoo.com), Department of Mathematics, University of Lagos, Akoka, Yaba, Nigeria, and **Ridwanulai I Abdulganiy** and **Adebola S. Okunuga**. *Third Derivative Block Multistep Algorithm for solving the Second Order Nonlinear Lane-Emden Type Equations*. Preliminary report.

In this paper we propose a direct solution for some well-known classes of Lane-Emden type equations which are nonlinear second order ordinary differential equations, without converting them into first order system of equations by using a new class of third derivative block multistep method . These methods are derived from a continuous scheme through interpolation and collocation technique and are assemble in block form to produce the numerical solution in the specified interval on the entire range of integration. The properties of the block method is discussed as well as the efficiency of the method by applying them on the some famous Lane-Emden type equations. (Received September 7, 2017)