

## عنوان مقاله:

Laguerre collocation method for solving Lane-Emden type equations

## محل انتشار:

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## خلاصه مقاله:

In this paper, a Laguerre collocation method is presented in order to obtain numerical solutions for linear and nonlinear Lane-Emden type equations and their initial conditions. The basis of the present method is operational matrices with respect to modified generalized Laguerre polynomials(MGLPs) that transforms the solution of main equation and its initial conditions to the solution of a matrix equation corresponding to the system of algebraic equations with the unknown Laguerre coefficients. By solving this system, coefficients of approximate solution of the main problem will be determined. Implementation of the method is easy and has more accurate results in comparison with results of other methods.

## کلمات کلیدی:

Modified generalized Laguerre polynomials, Numerical analysis, Collocation method, Operational matrices, Lane-Emden type equations

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1597900>

