

## عنوان مقاله:

Analysis of fractional differential equations with Antagana-Baleanu fractional operator

## محل انتشار:

فصلنامه ریاضی و علوم محاسباتی، دوره 3، شماره 3 (سال: 1401)

تعداد صفحات اصل مقاله: 0

## نویسنده:

Mohammed Hussein - Department of Mathematics, Thi Qar University, Nasiriyah, Iraq

## خلاصه مقاله:

To solve fractional-order differential equations (FODEs) with Antagana-Baleanu fractional operator (ABFO), an efficient strategy based on variational iteration method (VIM) and natural transform (NT) is given. Natural variational iteration technique is the name of this method (NVIM). This work also investigates the convergence of the solution of general FODEs obtained by the suggested method given the theory of fixed point and Banach spaces. Furthermore, the error analysis of the NVIM solution is also discussed. Two problems are solved to validate and efficacy demonstrate the of the present. It is also demonstrated that the results obtained from the suggested technique are in excellent agreement with the exact solution. The NVIMs numerical results reveal that the technique is simple to implement and computationally appealing.

## کلمات کلیدی:

Fractional calculus, Antagana-Baleanu, Natural Transform, variational iteration method

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1528740>

