

## عنوان مقاله:

Shifted Legendre Tau Method for Solving the Stochastic Weakly Singular Integro-Differential Equations

## محل انتشار:

دوفصلنامه آنالیز سراسری و ریاضیات گسسته، دوره 6، شماره 2 (سال: 1400)

تعداد صفحات اصل مقاله: 23

## نویسندگان:

Ruhangiz Azimi - Associate Professor, Mathematics and Computer Science Department, Adib mazandaran institute of higher education, Sari, Iran

Mostafa Mohagheghy Nezhad - Associate Professor, Mathematics and Computer Science Department, Adib mazandaran institute of higher education, Sari, Iran

Saede Foadian - School of Mathematics and Computer Science, Damghan University, Damghan, Iran

## خلاصه مقاله:

In this paper, the stochastic weakly singular integro-differential equation is discussed. The shifted Legendre Tau method is introduced for finding the unknown function. For this purpose, shifted Legendre polynomials and their properties are introduced. The proposed method is based on expanding the approximate solution as the elements of shifted Legendre polynomials. We reduce the problem to set of algebraic equations by using operational matrices. Also the convergence analysis of shifted Legendre polynomials and error estimation for this method have been discussed. Finally, several numerical examples are given to demonstrate the high accuracy of the method

## کلمات کلیدی:

Stochastic integro-differential equation, Shifted Legendre Tau method, Weakly singular kernel, Integro-differential equation

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1541368>

