

Special Issue on Fuzzy Linear and Nonlinear Integral Equations: Numerical Methods

Call for Papers

Integral equations are one of the most useful mathematical tools in both pure and applied mathematics. It has enormous applications in many real problems. Many initial and boundary value problems associated with ordinary differential equation (ODE) and partial differential equation (PDE) can be transformed into problems of solving some approximate integral equations.

Indeed, modeling such problems using integral equations with the exact parameters is not only easy but is also impossible in the real problems. For this purpose, one way is using some uncertainty measures for handling such lack of information. One the most and recent approaches is using Zadeh's fuzzy concept. So, instead of using deterministic models, we provide fuzzy integral equations both linear and nonlinear forms.

In fact, obtaining the exact solutions of such fuzzy integral equations is not possible in all cases because of the inherited restrictions form application of fuzzy concepts in these problems. So, in this special issue, we intend to consider the numerical methods to solve fuzzy integral equations and the related topics with real applications. Potential topics include, but are not limited to:

- Fuzzy linear and nonlinear integral equations with numerical methods
- Investigating the convergence, stability, and consistency of numerical approaches
- Numerically modeling the real problems associated with numerical methods
- Considering the differences between deterministic and fuzzy numerical methods to solve fuzzy integral equations
- Numerically solving fuzzy differential equations of arbitrary order using the equivalence fuzzy integral equations
- Obtaining some approximations of the solutions via ranking approaches
- Applications in real-world problems with numerical techniques

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Manuscript Due	Friday, 6 June 2014
First Round of Reviews	Friday, 29 August 2014
Publication Date	Friday, 24 October 2014

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