

Review of: "Taylor Series Based Domain Collocation Meshless Method for Problems with Multiple Boundary Conditions including Point Boundary Conditions"

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Potential competing interests: No potential competing interests to declare.

The revised manuscript devoted to study partial differential equations with boundary conditions by Taylor series based domain collocation Meshless method. The main idea of the method is to formulate a function which satisfies all the boundary conditions and then generalize the function to a family of functions by using Taylor series. Since the family of functions already satisfies the boundary conditions, the PDE solution can be determined by finding the values of unknown Taylor coefficients for which the residual of the partial differential equation over the domain is closest to zero. Using domain collocation method, the linear problem for partial differential equation transforms into a linear regression problem. The proposed method is extended by using multi-point Taylor series to solve problems with point boundary conditions. The proposed method has been successfully applied to solve homogenous/nonhomogenous Helmholtz and Poisson's partial differential equations. Results are also illustrated for both problems with Dirichlet and Neumann boundary conditions.

Results of the manuscript are interesting for specialists on the theory of an analytical and approximate solutions to the partial differential equations.

In our opinion, the manuscript can be published in the journal.