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 paper proposes a Taylor series based domain collocation PDE solution methodology that can handle multiple boundary conditions, including point boundary conditions. This method involves formulating a function that satisfies all the boundary conditions and generalizing it to a family of functions using Taylor series. By finding the values of unknown Taylor coefficients for which the residual of the PDE over the domain is closest to zero, the PDE solution can be determined. The proposed method has been successfully applied to solve homogenous/non-homogenous Helmholtz and Poisson's PDEs, as well as complex PDEs efficiently with less number of degrees of freedom (DOFs) compared to Taylor meshless method (TMM). The method is illustrated for problems with Dirichlet and Neumann boundary conditions and can also solve problems where the boundary is defined using a set of points instead of an analytical function.

The reviewer suggests that the paper should discuss the convergence analysis of the suggested method. This means that the authors need to provide a detailed analysis of the convergence rate and error estimates of the proposed method. This is important to ensure that the method is reliable and accurate for solving problems with multiple boundary conditions including point boundary conditions.

In addition, the reviewer suggests that comparisons with existing approximate methods should be provided for all applications, not just for the Helmholtz equation on rectangular domain as shown in Table 1. This is important to demonstrate the advantages and disadvantages of the proposed method compared to other methods in the literature.

Finally, the reviewer suggests that the limitations of the proposed method should be stated. This means that the authors need to discuss the cases where the method may not be applicable or where it may have limitations in terms of accuracy or computational efficiency. This will help readers to understand the scope and applicability of the proposed method.