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.

This paper presents a meshless method for solving PDEs with multiple boundary conditions including point boundary conditions. The main task of the presented method is to develop a family of functions which satisfies the boundary conditions by using Taylor series. The feature of the paper is that the solution of the PDE is transformed into a linear regression problem to solve for unknown Taylor coefficients over domain collocation points, and the novelty of the paper is that a modification to method by using multi-point Taylor series is made, which makes the method capable of accounting for multiple point boundary conditions.

The existing meshless methods have difficulty in handling point boundary conditions. Therefore, this paper is a meaningful try and can be considered to be published in Qeios. However, as listed below, the paper is not clearly expressed and many errors exist.

1. References are needed for equation (2)-(4).
2. In equation (4), the involved $p(x,y)$ may miss the subscript m-1. The authors should confirm this.
3. In equation (6), in the second term on the right-hand side, symbol Omega should have subscript 1.
4. In equation (7), why Omega has no subscripts? The authors should confirm this.
5. In equation (8), all included variables should be defined, otherwise it is difficult to connect them with the coefficients appearing in equation (7).
6. In the second equation below equation (10), what is the d included in the term of i+j<d ?
7. In section 3.2, a curve about relative errors of the computed and analytical values of u should be given, rather than only contour plots.