A Comparison on Three Domain-Type RBF Discretization Schemes

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Summary

The RBF-based numerical methods can effectively solve high-dimensional and complex-shaped-boundary problems for which the standard finite element methods perform not so well. In this study, we compare the three domain-type RBF collocation discretization schemes, namely, the Kansa method, the Hermite collocation method, and the Modified Kansa method, in terms of their numerical accuracy, interpolation matrix condition number and convergence rate.

keywords: RBF collocation method; Kansa method; Hermite collocation method; Modified Kansa method

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