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A Multinode Shepard Framework for the Numerical Solution of Integral Equations

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Abstract

This presentation focuses on the application of Multinode Shepard Methods (MSM) for approximating the solutions of integral equations. Unlike traditional interpolation techniques that require structured meshes, MSM provides a powerful meshless alternative capable of handling complex geometries and scattered nodal distributions. The MSM enhances the accuracy and stability of the numerical scheme. By analyzing the construction of the MSM operator, we show its versatility in transforming integral problems into manageable algebraic systems, offering a robust balance between computational cost and convergence rates

Keywords: Integral equations, meshless methods, collocation method, multinode Shepard method.

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