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A study on the influence of RBF Center Distribution for Structural Analysis using Kansa method

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This work investigates the influence of center positioning in Radial Basis Function (RBF) collocation methods for solving two-dimensional structural problems. The study enforces equilibrium using the indefinite equations approach and evaluates different center distributions to assess their impact on solution accuracy and stability. The numerical results are compared against Finite Element Method (FEM) solutions and available analytical benchmarks to determine the effectiveness of the tested approaches. The findings provide insights into optimal node placement strategies, improving the reliability and applicability of RBF collocation methods in structural analysis.

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