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Vibration of Thin Beams by PIM and RPIM methods

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In this study, vibration of thin beams are analyzed by using point interpolation (PIM) and radial point interpolation (RPIM) methods with standard Gaussian integration and a nodal integration based on the Taylor series expansion. The effect of integration schemes, support domain sizes and RPIM shape parameters on the vibration modes are investigated. Simply supported, clamped and cantilever beams are solved by linear elastic materials with uniform cross-sections. The results are compared with finite element solutions in ANSYS.

Keywords: PIM, RPIM, Vibration, Meshfree, Thin Beams.