Rigid Body Hamiltonian Error Convergence Gauss-2 or HBVM(1,1) 10⁻³ Gauss-4 or HBVM(2,2) 10⁻⁵ Gauss-6 or HBVM(3,3) $H(x_{exact})$ Gauss-8 or HBVM(4,4) 10^{-7} Lobatto-2 or HBVM(1,1) Lobatto-4 or HBVM(2,2) 10^{-9} $|H(x_{approx})|$ Lobatto-6 or HBVM(3,3) 10^{-11} Lobatto-8 or HBVM(4,4) Slope order 2 10^{-13} Slope order 4 10^{-15} Slope order 6 Slope order 8 10^{-17} 10⁻³ 10^{-2} 10^{-1} Step length