Hénon-Heiles Global Error Convergence Hamiltonian Solution 10^{-4} 10⁻³ 10^{-6} 10^{-5} $|H(x_{approx}) - H(x_{exact})|$ 10-8 $x_{approx}||_2$ 10^{-7} 10^{-10} 10^{-9} $\|X_{exact}\|$ 10-12 10^{-11} 10^{-14} 10-13 10^{-16} 10^{-15} 10^{-3} 10^{-2} 10⁻³ 10^{-1} 10^{-2} 10^{-1} Δt Δt Gauss-2 or HBVM(1,1) Gauss-HBVM(4,2) Gauss-HBVM(6,3) Slope order 6 Gauss-HBVM(2,1) Gauss-6 or HBVM(3,3) Slope order 2 Slope order 8 Gauss-4 or HBVM(2,2) Gauss-HBVM(4,3) Slope order 4 Slope order 10 Gauss-HBVM(3,2) Gauss-HBVM(5,3)