H order 6 Error Convergence, 99.0% Confidence Weak/Hamiltonian Strong/Mean Square 10^{-3} 10^{-4} $E[H(x_{exact})]$ 10^{-5} 10^{-6} $X_{approx}[1_2^2]$ 10^{-7} 10^{-8} $E[||X_{exact}|]$ 10^{-9} $E[H(x_{approx})]$ 10^{-10} 10^{-11} 10^{-12} 10^{-14} 10^{-13} 10^{-16} 10^{-15} 10^{-3} 10^{-2} 10^{-3} 10^{-2} Δt Δt Slope order 1 Slope order 6 Lobatto-HBVM(3,2) Lobatto-HBVM(4,3) Slope order 2 Lobatto-2 or HBVM(1,1) Lobatto-HBVM(4,2) Lobatto-HBVM(5,3) Slope order 3 \leftarrow Lobatto-HBVM(2,1) Lobatto-HBVM(5,2) Lobatto-HBVM(6,3)

Lobatto-HBVM(6,2)

Lobatto-6 or HBVM(3,3)

Lobatto-HBVM(7,3)

Slope order 4

Slope order 5

Lobatto-HBVM(3,1)

Lobatto-4 or HBVM(2,2)