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Symplectic Integrator and its Applications HIROTO KOBAYASHI, Chubu University — The first- and the second-order symplectic integrators for the one-dimensional harmonic oscillator are reconstructed on the basis of effective Liouville operators, which can be defined only within the convergence radius. The first-order one for the q^4-potential system breaks down for different time steps depending on the initial condition, which indicates that no conservation value exists for the system in the first- order symplectic integrator.

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