

Engineering structures often have nonlinear characteristics. Many of these nonlinear systems could be modelled as piecewise linear. The dynamic analysis of such systems can be carried out by the direct integration of the mathematical model of the system. In this article, solution schemes are identified and qualified studying a single degree-of-freedom system and evaluated studying real-life engineering structures. As an alternative, a modified Newmark method with iteration for nonlinear forces and half-step error monitoring is presented. The modified scheme has been found to be efficient and accurate.