

On a Hartman linearization theorem for a class of ODE with impulse effect

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Hartman's linearization theorem for ordinary differential equations states that a 1:1 correspondence exists between solutions of a linear autonomous system and those of a perturbed system as long as the perturbation term satisfies some goodness conditions, like smallness, continuity or being Lipschitzian. This theorem is proven to hold not only for systems accepting a broader class of dichotomies, but also for a class of systems with impulse effect. This furnishes a result valid for pure continuous systems, described by an ordinary differential equation, as well as for pure discrete systems, described by difference equations.