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ON CONSTRUCTION OF PERIODIC SOLUTIONS OF QUASILINEAR SYSTEMS IN THE CASE WHEN AMPLITUDE EQUATION DEGENERATES

Abstract

A problem on finding periodic solutions of quasilinear systems in the case when generating system has a family of such solutions, and amplitude equation has multiple roots, is considered. Two-sweep iteration procedure of Newton type which allows to construct approximate solutions for each of branches, is considered. The accompanying estimates for rate of convergence and error of iteration are obtained. An example of Wan der Pole oscillator in the neighbourhood of branching point is considered.