# Bifurcation of Periodic Solutions to Nonlinear Measure Differential Equations

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The contribution is based on the joint paper with Carol Mesquita (Federal University of São Carlos, Brazil).

It deals with the periodic bifurcation problems for generalizations of ordinary differential systems. The bifurcation is understood in the static sense of Krasnoselskii and Zabreiko. First, the conditions necessary for the given point to be bifurcation point for non autonomous generalized ordinary differential equations (based on the Kurzweil gauge type generalized integral) are proved. Then, as the main contribution, analogous results are obtained also for the nonlinear non autonomous measure differential equations considered in the sense of distributions. To this aim their relationship to Kurzweil's generalized differential equations is disclosed. The proofs rely on the theory of the Kurzweil-Stieltjes integration. As the systems studied in the contribution encompass many types of equations such as impulsive differential equations, ordinary differential equations, dynamic equations on time scales etc., the results of the paper offer applications to rather wide scale of practical problems. Two illustrating examples are included, as well.