

**A NOTE ON PERIODIC SOLUTIONS OF AUTONOMOUS
HAMILTONIAN SYSTEMS EMANATING FROM
DEGENERATE STATIONARY SOLUTIONS**

E. NORMAN DANCER[†]

School of Mathematics, University of Sydney, Sydney, NSW 2006, Australia

SŁAWOMIR RYBICKI[‡]

Faculty of Mathematics and Informatics, Nicholas Copernicus University
PL 87—100 Toruń, ul. Chopina 12/18, Poland

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1. Introduction. The aim of this paper is to formulate sufficient conditions for the existence of global bifurcations of nonstationary periodic solutions of autonomous Hamiltonian systems. There are many bifurcation theorems describing bifurcations from non-degenerate critical points of Hamiltonians, see for example [6–9], [11], [12]. For a discussion concerning bifurcations of periodic solutions of Hamiltonian systems we refer the reader to [19]. On the other hand there are few results concerning the degenerate case. Results of this type have been announced by the first author in [6]. In this situation Szulkin has formulated (see Theorem 4.4 in [19]) sufficient conditions for the existence of local bifurcations of periodic solutions. As the main tool he has used Morse theory. We also refer the reader to [11] for related results. In this article we formulate sufficient conditions for the existence of global bifurcations of nonstationary periodic solutions of Hamiltonian systems. It is worth pointing out that we consider bifurcations of nonstationary periodic solutions from degenerate critical points of Hamiltonians. As the main tool we use degree theory constructed by the second author in [16] and developed in [18].

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