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Reduction of periodic difference systems to linear or autonomous ones ☆

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Abstract

We extend Floquet theory for reducing nonlinear periodic difference systems to autonomous ones (actually linear) by using normal form theory.

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Keywords: Averaging method; Normal forms; Periodic difference systems

1. Introduction and statement of the main results

The theory of difference equations (or recurrence relations, iterated maps), the methods used in their solutions and their wide applications have advanced beyond their adolescent stage to occupy a central position in applicable analysis. In fact, in the last few years, the proliferation of the subject is witnessed by hundred of research articles and several monographs, see for instance [1,6].

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