A complete description of the generating family i of periodic solutions of R3BP

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Abstract

We consider the plane circular restricted three-body problem (R3BP). The family i of generating periodic solutions of this problem, i.e. for $\mu = 3D0$, has an infinitely complicated structure that was not described completely until recently. A description of the initial part of this family was given in [1] and [2]. An analysis of this initial part in some special coordinates, as well as some recent computations, reveals a cyclic structure of characteristics of this family that allows to continue this family by induction. As a result, we give a complete description of the structure of the generating family i and illustrate this structure by a number of figures and tables.

References.

1. Bruno, A.D. Simple periodic solutions of the restricted three-body problem in the Sun-Jupiter case // Preprint of Keldysh Inst. of Appl. Math., no. 66, 1993, 27 p.

2. Henon, M. Generating Families of the Restricted Three-Body Problem. Springer, Berlin etc., LNP NsM 52, 1997. 278 p.