The possibilities by symbolic analysis in velocity-curvature space: TQ-bifurcation, symmetry, synchronization

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A new method of symbolic analysis based on finite discretization of velocity-curvature space is proposed. Introduced the minimum alphabet, which is invariant to uniform tension and shear the studied sequence. The proposed method of analysis is computationally oriented. It allows you to study in detail the shape of the trajectories and structure of dynamics of the multidimensional discrete sequences, maps, and flows. For this analysis defined a number of basic features and concepts: TQ-bifurcation, synchronous domain, etc. Demonstrated the possibility of a constructive method application to problems of study: global structure of trajectories of dynamical systems, symmetry of dynamic processes and systems, synchronization of chaotic oscillations.

Ключевые слова: symbolic CTQ-analysis, discrete dynamical system, shape of the trajectory, structure of dynamics, symmetry, symbolic image, TQ-bifurcation, T-synchronization.

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