

Computer-Assisted Proof for the Stability of the Eight

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We present general method of computer assisted proofs of choreographies existence in the N-body problem. As byproduct it provides rigorous approximation of choreographies initial conditions. We use this data to show linear stability of the famous Eight solution restricted to the plane. In this case the use of multiple precision interval arithmetics was needed to get good enough rigorous estimations of the monodromy matrix.