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**Maciej J Capinski** and **Jorge L Gonzalez\***, School of Mathematics, Georgia Institute of Technology, Atlanta, GA 30332, and **Jean-Pierre Marco** and **James Mireles-James**. *A proof with rigorous computations of a diffusion mechanism in a-priori chaotic systems.*

In 1964, Arnold explicitly showed how the accumulation of arbitrarily small perturbations from a system with conserved quantities can result in arbitrarily large effects over time. The Normally Hyperbolic Invariant Manifolds in these systems survive small perturbations and drift trajectories can appear along orbits connecting the associated stable and unstable manifolds. The relevant quantities are very difficult to compute in applications to Celestial Mechanics and Particle Physics. We develop rigorous results and verify the mechanism for the Generalized Standard map (Chirikov Standard model) which serves as a simplified model for more involved problems. (Received January 12, 2021)