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6.1 Impact Pairs6.2 Analytical, Simplest Periodic Motions; 6.2.1 Asymmetric Period-1 Motion; 6.2.2 Stability and Bifurcation; 6.2.3 Numerical Illustrations; 6.3 Possible Impact Motion Sequences; 6.4 Grazing Dynamics and Stick Motions; 6.5 Mapping Structures and Periodic Motions; 6.6 Stability and Bifurcation; 7 Nonlinear Dynamics of Fermi Oscillators; 7.1 Mapping Dynamics; 7.2 A Fermi Oscillator; 7.2.1 Absolute Description; 7.2.2 Relative Description; 7.3 Analytical Conditions; 7.4 Mapping Structures and Motions; 7.4.1 Switching Sets and Generic Mappings; 7.4.2 Motions with Mapping Structures 7.4.3 Periodic Motions and Local Stability7.5 Predictions and Simulations; 7.5.1 Bifurcation Scenario; 7.5.2 Analytical Prediction; 7.5.3 Numerical Simulations; Appendix 7.A; References; Index

Sommario/riassunto

Presents a systematic view of vibro-impact dynamics based on the nonlinear dynamics analysis Comprehensive understanding of any vibro-impact system is critically impeded by the lack of analytical tools viable for properly characterizing grazing bifurcation. The authors establish vibro-impact dynamics as a subset of the theory of discontinuous systems, thus enabling all vibro-impact systems to be explored and characterized for applications. Vibro-impact Dynamics presents an original theoretical way of analyzing the behavior of vibro-impact dynamics that can be exte