KNEADING IN LORENZ AND SHIMIZU-MORIAKO MODEL

TINGLI XING

GEORGIA STATE UNIVERSITY

ABSTRACT. "Painting" the kneading invariants reveals the hidden structure of codimension-two bifurcations such as those found in the Lorenz system and Shimizu-Moriako models. We introduce a novel method based on the kneading invariants to elucidate the detailed bifurcation structure. The method will allow for the practical extension for kneading invariant with more than 2 symbols as well as bifurcation of higher codimension.