Universality Properties of Complex Evolutionary Systems

Sensitive Dependence on Initial Conditions: X_{next}

r = 4.000001

Period Doubling Route to Chabs 0.9 -0.9 - 0.8 0.8 -0.7 0.7 - 0.6 0.5 -- 0.5 0.4 - 0.3 - 0.2 0.1 Variables r Value: 4.000001 Calculation Interval: 5 View Output Report X-Next _ | _ | × Period Doubling Route to Chaos 0.9 -0.9 r = 4.0000002 Initial XI + .4 0.8 --0.80.7 - 0.7 0.6 - 0.6 0.5 0.4 0.31 - 0.3 0.2 0.1 r Value: 4.000002 Calculation Interval: 5 Report View Output Initial X: 4 Overwrite Previous: <u>B</u>ifurcation End Calc. Quit Diagram Iterations: 50 Plot Sine Wave: Plot Random Noise: Parabola :

r = 4.000002