

1067-37-2072

James A. Yorke* (yorke@umd.edu), Dept of Mathematics, Univ. of Maryland, College Park,
MD 20742. *Period doubling cascades for ordinary differential equations*. Preliminary report.

This is joint work with Evelyn Sander. We developed a theory of cascades that enables us to get conclusions for differential equations in the plane, such as the forced damped pendulum and forced damped Duffing equation. This work is topological and connects cascades to the development of chaos. This theory will be contrasted with the scaling theory of cascades that began with the work of M Feigenbaum. (Received September 22, 2010)