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**COVER** Even systems as simple as a periodically forced damped pendulum can have complex behavior. This computer-generated plot shows initial pendulum velocities (measured horizontally) and positions (measured vertically). Orbits starting at points in the red region eventually settle into one type of periodic motion, while orbits starting in the blue region yield a different type of periodic motion. The boundary between these regions is fractal. The lighter the shade of red or blue, the longer it takes to settle into the corresponding motion. See page 632. [Photo courtesy of C. Grebogi, E. Ott, and J. A. Yorke, University of Maryland, College Park, MD 20742]

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