1116-K5-579   **L. Kerry Mitchell*** (`lkmitch@gmail.com`). *Dynamic Chaos Game.*

The standard Chaos Game is a simple demonstration that is often used as an introduction to chaos, fractals, strange attractors, iterated function systems, and fractal dimension. While easy to implement and accessible to non-specialists, it is aesthetically limited to variations on the Sierpinski triangle (whose vertices are the three anchor points in the standard implementation). The present work expands the Chaos Game by allowing the anchor points to move during iteration. Thus, the single attractor is replaced with a family of attractors, which are then combined into the final image.

With this method, there can be any number of anchor points (as opposed to three for the Chaos Game). Rather than being fixed, the anchor points may be moved each iteration, like points in an animation. Several classes of closed curves are investigated: circle, astroid, rose curve, and Lissajous curve. Also, the points can slide along line segments. The probability of each anchor point being used can be set, as well as the position of the new iterated point, relative to the old point and the chosen anchor. Example images are shown for the various classes of anchor point trajectories and recommendations for further investigation are given. (Received September 07, 2015)