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**Fathallah-Shaykh M Hassan\*** (hfathall@uab.edu), FOT 1020, 1530 3RD Avenue South, Birmingham, AL 35294-3410. *High-Dimensional Counterexamples of the Kaplan-Yorke Conjecture: Fractal Dimension of the Drosophila Circadian Clock.*

Kaplan and Yorke conjectured that the dimension of a strange attractor can be approximated from the spectrum of its Lyapunov exponents. Clockwork Orange (CWO) is transcriptional repressor of direct target genes that appears to play a key role in controlling the dynamics of the *Drosophila* circadian clock. The box-counting and Kaplan-Yorke dimensions of models of the *Drosophila* circadian clock reveal that these strange attractors as counterexamples of the Kaplan-Yorke conjecture and highlight the complexity of the time-keeping actions of CWO in light-day cycles. (Received September 20, 2010)