

CLDW PHYSIOLOGICAL SYSTEM: AS AN AUTONOMOUS COMPLEX PHYSICAL SYSTEM

G. Cigdem Yalcin and K.Gediz Akdeniz

Istanbul University, Faculty of Sciences, Department of Physics, Vezneciler, Istanbul, Turkey

The metaphors from the physiological systems as well as biological systems could lead us to simulation and mechanical modellings for complex physical systems. For this purpose, we have considered nonlinear dynamical properties of sensitively recorded breathing signals (SRBS) of representative rats. We have investigated the fractal dimensions and lyapunov exponents of the SRBS attractors of rats by time series analysis method. We have concluded that the CLDW (Cardia, Lungs, Diaphragm and Windpipe) physiological system could be a good example of autonomous complex physical systems.