NONLINEAR DYNAMICS, CHAOS & APPLICATIONS TO TUNABLE LASERS & RELATED AREAS

SUNDARAM RAMCHANDRAN

M.S (Systems Science / Applied Math / Systems Engg) SUNY Binghamton, Binghamton, NY, USA

ABSTRACT

This article looks at the applications of the ideas of nonlinear dynamics and chaos from applied mathematics and other ideas from pure mathematics (outlined elsewhere) towards realization of chaotic systems and their applications to design of tunable circuits with relevance to electronic circuit design and related areas. Some applications to medicine, biology and health care are also examined.

KEYWORDS: Feedback, Difference Map, Bi-Stability, Multi-Stability, Deterministic, Nonlinear, Acousto-Optic, Acousto-Optic Cell, Phased Array, Chaos, Tunable Lasers, Period=Doubling, Intermittency, Hysteresis, Stem Cells, Quantum Computing, Phase Space..Chaotic Search..Etc