Contributions to Nonlinear Dynamics, Chaos and Complex Systems

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The main goal of this talk is to describe some of my achievements and research work in the field of nonlinear dynamics, chaos and complex systems. Among the different lines of research, I will mention results on dynamics of partial control, vibrational resonance and nonlinear resonances, fractal structures in nonlinear dynamics, modeling biological systems, predictability of chaotic dynamics, and some applications to different topics in Physics, such as galactic dynamics, chaos & entanglement, cold atoms and black hole shadows.