Mihai Dimian

Analysis of noise-driven phenomena in hysteretic systems with applications in data storage technology and digital signal processing

Abstract: Hysteresis and noise are ubiquitous phenomena in science and engineering playing an increasingly important role in research and technological developments. Mathematical modeling and simulations have flourished in both areas laying down a multidisciplinary framework for their analysis. While the quasistatic study of hysteresis has reached a certain degree of maturity, the stochastic analysis of hysteretic systems is currently under major developments. This talk is aimed at providing a general analysis of noise-driven phenomena in hysteretic systems with applications in data storage technology and digital signal processing. Both disruptive and constructive effects on noise in such systems are discussed along with their technological implications.