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Nota di contenuto	Regulation of IP3 Receptors by IP3 and CA2+ -- The Endoplasmic Reticulum: a Central Player in Cell Signalling and Protein Synthesis -- Mitochondrial and ER Calcium Uptake and Release Fluxes and Their Interplay in Intact Nerve Cells -- Global and Local Regulation of Neuronal Differentiation By Calcium Transients -- Role of NAADP in Coordinating Spatiotemporal Aspects of Calcium Signalling -- Models of Cardiac CA2+- Induced CA 2+ Release and Ca2+ Sparks -- From Simple to Complex Ca2+ Oscillations: Regulatory Mechanisms and Theoretical Models -- Information Processing in Calcium Signal

	Transduction -- Modeling Calcium Waves -- Mathematical Modeling and High Resolution Fluorescence Imaging for Studying Calcium Regulation -- Langevin Modeling of Intracellular Calcium Dynamics -- Building a Wave - Models of the Puff-to-Wave Transition.
Sommario/riassunto	Intracellular Calcium is an important messenger in living cells. Calcium dynamics display complex temporal and spatial structures created by the concentration patterns which are characteristic for a nonlinear system operating far from thermodynamic equilibrium. Written as a set of tutorial reviews on both experimental facts and theoretical modelling, this volume is intended as an introduction and modern reference in the field for graduate students and researchers in biophysics, biochemistry and applied mathematics.