Chaos control in discrete population models

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Complex dynamics and discrete population models have been linked at least since the pioneering work of Robert May in the 1970s. The possibility of breaking the period-doubling route to chaos in simple models by restocking or harvesting was later noticed by McCallum and Stone in the early 1990s. Their work opened the study of chaos control in population dynamics, which has been a matter of extensive studies due to its relevance in such important areas as management of exploited populations and control of plagues. Our main aim in this talk is showing how different control strategies lead to interesting dynamical phenomena such as sudden collapses, essential extinction, bubbling, and the hydra effect. We underline the importance of two often underestimated issues: census timing and intervention time.