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On the practical stability of h -manifolds for impulsive fractional-order gene regulatory networks

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We study a fractional-order generalization of a class of impulsive gene regulatory networks (GRNs). The concept of stability with respect to a manifold is introduced. The stable behavior of specific manifolds defined by a function h with respect to the model is investigated, and sufficient conditions are proposed by constructing suitable Lyapunov-type functions. The control effects of impulsive perturbations at fixed times on the stability behavior are discussed.

Keywords: gene regulatory networks, fractional derivatives, impulses, practical stability, h -manifolds

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