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Solitary waves in the model of active media, taking into account relaxing effects

We study a system of differential equation simulating transport phenomena in active structured media. The model is a generalization of the McKean's modification of the celebrated FitzHugh–Nagumo system, describing the nerve impulse propagation in axon. It takes into account the effects of memory, connected with the presence of internal structure. We construct explicitly the localized traveling wave solutions and analyze their stability.