

Nonlinear Multiagent Systems with Relations of Concurrency, Cooperation and Dominance

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We deal with Ferhulst-like dynamical systems in n-dimentional case [1]:

$$x_i^{(n+1)} = x_i^{(n)} \left(1 + \alpha_i + \alpha_i \sum_{j=1}^m \beta_{ij} x_j^{(n)} \right) - \gamma_i; \quad (1)$$

The classification algorithm is proposed, based on types of inter-connections in a system. It can reduce a set of parameter values for direct exploration. For $n = 4$ with analytical methods and computer simulations the classes of dynamical systems with chaotic dynamics were singled out.

- [1] V. M. Saptsin, V.N. Soloviev *Relativistic quantum econophysics - new paradigms in complex systems modelling*, arXiv:0907.1142, 2009.