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**Three models of fuzzy logic controllers.** (English) Zbl 0770.93060  
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Summary: The article describes three alternative representations of fuzzy logic controllers (FLC): a granule-based model, a model using Sugeno method of fuzzy reasoning, and a cell model. The main characteristics and relationships between these models are discussed. A general analysis of the FLC in the framework of conventional controllers is provided.

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**References:**

- [1] E.A. Barbashin, Introduction to the Theory of Stability (Wolters-Noordhoff, Groningen, Netherlands).
- [2] Emelyanov, S. V.; Utkin, V. I.: Variable structure systems for control of plants with large parameter variations. Doklady ANSSSR 152, No. 2, 299-301 (1993)
- [3] Filev, D.: Towards the concept of quasilinear fuzzy systems. Proc. internat. Conf. on fuzzy logic and neural nets, 761-765 (1990)
- [4] Filev, D.: Fuzzy modeling of complex systems. Int. J. Approx. reasoning 5, 281-290 (1991) · [Zbl 0738.93048](#)
- [5] Filev, D.; Yager, R. R.: A generalized defuzzification method under BAD distributions. Int. J. Intelligent systems 6, 687-697 (1991) · [Zbl 0752.93040](#)
- [6] Filev, D.; Yager, R. R.: Three models of fuzzy logic controllers. Technical report # 1206 (1991) · [Zbl 0770.93060](#)
- [7] Kawaji, S.; Matsunaga, M.: Fuzzy control of VSS type and its robustness. Proc. IFSA congr., 81-88 (1991) · [Zbl 0844.93049](#)
- [8] Klir, G.: A principle of uncertainty and information invariance. Int. J. Gen. systems 17, 249-275 (1990) · [Zbl 0703.94026](#)
- [9] Kosko, B.: Neural networks and fuzzy systems. (1991) · [Zbl 0749.93068](#)
- [10] Macvicar-Whelan, P. J.: Fuzzy sets for man-machine interactions. Int. J. Man-machine studies 8, 687-697 (1977) · [Zbl 0342.68057](#)
- [11] Mamdani, E. H.; Assilian, S.: An experiment in linguistic synthesis with a fuzzy logic controller. Int. J. Man-machine studies 7, 1-13 (1975) · [Zbl 0301.68076](#)
- [12] Mizumoto, M.: Realization of PID controls by fuzzy control methods. Proc. internat. IEEE conf. On fuzzy systems, 709-715 (1992)
- [13] Palm, R.: Sliding mode fuzzy control. Proc. internat. IEEE conf. On fuzzy systems, 519-526 (1992)
- [14] Pedrycz, W.: Fuzzy control and fuzzy systems. (1989) · [Zbl 0723.93042](#)
- [15] Slotine, J. -J.E.; Li, W.: Applied nonlinear control. (1990)
- [16] Sugeno, M.; Takagi, T.: A new approach of design of fuzzy controller. Advances in fuzzy sets, possibility theory and applications, 325-334 (1993)
- [17] Takagi, T.; Sugeno, M.: Derivation of fuzzy control rules from human operators actions. Proc. IFAC symp. On fuzzy information, 55-60 (1983)
- [18] Tang, K. L.; Jmr: Comparing fuzzy logic with classical controller design. IEEE trans. System man cybernet 17, 1085-1087 (1987)
- [19] Utkin, V. I.: Variable structure systems with sliding modes. IEEE trans. Automat. control. 22, 212-222 (1977) · [Zbl 0382.93036](#)
- [20] Wang, L. -X.; Mendel, J. M.: Black propagation fuzzy systems as nonlinear dynamic systems identifiers. Proc. internat. IEEE conf. On fuzzy systems, 1409-1416 (1992)
- [21] Yager, R. R.; Filev, D. P.: Fuzzy logic controllers with flexible structures. Proc. 2nd int. Conf. on fuzzy sets and neural networks, 317-320 (1992)
- [22] Yager, R. R.; Pilev, D. P.: Relational partitioning of fuzzy rules. Technical report # MII-1326 (1993)

- [23] Yager, R. R.; Filev, D. P.: Essentials of fuzzy modeling and control. (1994) · [Zbl 1002.93530](#)
- [24] Zadeh, L.: Outline of a new approach to the analysis of complex systems and decision processes. IEEE trans. Systems man cybernet. 3, 28-44 (1973) · [Zbl 0273.93002](#)
- [25] Zheng, L.: A practical guide to tune of PI-like fuzzy controllers. Proc. internat. IEEE conf. On fuzzy systems, 633-640 (1992)

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