

**Le Sceller, L.; Letellier, C.; Gouesbet, G.**

**Global vector field reconstruction including a control parameter dependence.** (English)

Zbl 1060.37502

Phys. Lett., A 211, No. 4, 211-216 (1996).

Summary: A global vector field reconstruction method including a control parameter dependence is derived and tested with the Rössler model. The reconstructed model is checked by comparing its bifurcation diagram with the one of the original system.

**MSC:**

**37D45** Strange attractors, chaotic dynamics of systems with hyperbolic behavior

Cited in **2** Documents

**37N35** Dynamical systems in control

**Full Text:** [DOI](#)

**References:**

- [1] Peng, C. K.; Buldyrev, S.; Goldberg, A. L.; Havlin, S.; Sciortino, F.; Simons, M.; Stanley, H. E.: Nature. 356, 168 (1992)
- [2] Packard, N. H.; Crutchfield, J. P.; Farmer, J. D.; Shaw, R. S.: Phys. rev. Lett.. 45, 712 (1980)
- [3] Crutchfield, J. P.; Mcnamara, B. S.: Complex systems. 1, 417 (1987)
- [4] Stanley, H. E.; Buldyrev, S. V.; Goldberger, A. L.; Goldberger, Z. D.; Havlin, S.; Mantegna, R. N.; Ossadnik, S. M.; Peng, C.-K.; Simons, M.: Physica A. 205, 214 (1984)
- [5] Farmer, J. D.; Sidorowich, J. J.: Phys. rev. Lett.. 59, 845 (1987)
- [6] Voss, R.: Fractals. 2, No. No. 1, 1 (1994)
- [7] Feder, J.: Fractals. (1988) · [Zbl 0648.28006](#)
- [8] Agarwal, A. K.; Ahalpara, D. P.; Kaw, P. K.; Prablakera, H. R.; Sen, A.: J. phys.. 35, 287 (1990)
- [9] Mannella, R.; Grigolini, P.; West, B. J.: Fractals. 2, No. No. 1, 81 (1994)
- [10] Breeden, J. L.; Hübler, A.: Phys. rev. A. 42, 5817 (1990)
- [11] Casdagli, M.; Eubank, S.; Farmer, J. D.; Gibson, J.: Physica D. 51, 51 (1991)
- [12] Trefán, G.; Floriani, E.; West, B. J.; Grigolini, P.: Phys. rev. E. 50, 2564 (1994)
- [13] Giona, M.; Lendini, F.; Cimagalli, V.: Phys. rev. A. 44, 3496 (1991)
- [14] Geisel, T.; Heldstab, J.; Thomas, H.: Z. phys. B. 55, 165 (1984)
- [15] Gouesbet, G.: Phys. rev. A. 43, 5321 (1991)
- [16] Zumofen, G.; Klafter, J.: Phys. rev. E. 47, 851 (1993)
- [17] Gouesbet, G.: Phys. rev. A. 44, 6264 (1991)
- [18] Liebovitch, L. S.; Tóth, T. I.: J. theoret. Biol.. 148, 243 (1991)
- [19] Golding, G. B.: V.loeschke genetic constraints on adaptive evolution. Genetic constraints on adaptive evolution (1987)
- [20] Palus, M.; Dvorák, I.: Physica D. 55, 221 (1992)
- [21] Allegrini, P.; Barbi, M.; Grigolini, P.; West, B. J.: Phys. rev. E. 52, 5281 (1995)
- [22] Gouesbet, G.: Phys. rev. A. 46, 1784 (1992)
- [23] Onsager, L.: Phys. rev.. 38, 2265 (1931)
- [24] Gouesbet, G.; Maquet, J.: Physica D. 58, 202 (1992)
- [25] Gouesbet, G.; Letellier, C.: Phys. rev. E. 49, 4955 (1994)
- [26] Lió, P.; Ruffo, S.; Buiatti, M.: J. theor. Biol.. 171, 215 (1994)
- [27] Letellier, C.; Le Sceller, L.; Maréchal, E.; Dutertre, P.; Maheu, B.; Gouesbet, G.; Fei, Z.; Hudson, J. L.: Phys. rev. E. 51, 4262 (1995)
- [28] C. Letellier, L. Le Sceller, P. Dutertre, G. Gouesbet. Z. Fei and J.L. Hudson, J. Phys. Chem., to be published.
- [29] Brown, R.; Rulkov, N. F.; Tracy, E. R.: Phys. rev. E. 49, 3784 (1995)
- [30] Fei, Z.; Hudson, J. L.; Kelly, R. G.: J. electrochem. Soc.. 141, L123 (1994)

- [31] Rico-Martínez, R.; Krischer, K.; Kevrekidis, I. G.; Kube, M. C.; Hudson, J. L.: Chem. eng. Commun.. 118, 25 (1992)
- [32] Lapedes, A. S.; Farber, R. B.: Los alamos report LA-UR, 87-2662. (1987)
- [33] Letellier, C.; Dutertre, P.; Maheu, B.: Chaos. 5, 271 (1995)
- [34] Dutertre, P.: Caractérisation des attracteurs à l'aide d'orbites périodiques. Ph.d. thesis (1995)
- [35] C. Letellier and G. Gouesbet, Equivalences between original and reconstructed strange attractors in the case of 3D differential embeddings, submitted to Chaos.

This reference list is based on information provided by the publisher or from digital mathematics libraries. Its items are heuristically matched to zbMATH identifiers and may contain data conversion errors. It attempts to reflect the references listed in the original paper as accurately as possible without claiming the completeness or perfect precision of the matching.