

A Complete List of Publications of Changsong Zhou

Publications in Refereed Journals

1. C.S. Zhou, L. Zemanová, G. Zamora, C. C. Hilgetag and J. Kurths, Structure-function relationship in complex brain networks expressed by hierarchical synchronization, *New J. Phys.* (accepted).
2. Changsong Zhou, Lucia Zemanová, Gorka Zamora, Claus C. Hilgetag and Jürgen Kurths, “Hierarchical organization unveiled by functional connectivity in complex brain networks”, *Phys. Rev. Lett.* **97**, 238103 (2006).
3. Lucia Zemanová, Changsong Zhou and Jürgen Kurths, “Structural and functional clusters of complex brain networks”, *Physica D* **224**, 202 (2006).
4. Changsong Zhou and Jürgen Kurths, “Dynamical weights and enhanced synchronization in adaptive complex networks”, *Phys. Rev. Lett.* **96**, 164102 (2006).
Selected for the May 1, 2006 issue of *Virtual Journal of Biological Physics Research*.
5. M.S. Baptista, C. Zhou and J. Kurths, “Information transmission in phase synchronous chaotic arrays”, *Chin. Phys. Lett.* **23**, 560 (2006).
6. Changsong Zhou, A.E. Motter and Jürgen Kurths, “Universality in the synchronization of weighted random networks”, *Phys. Rev. Lett.* **96**, 034101 (2006).
Selected for the February 1, 2006 issue of *Virtual Journal of Biological Physics Research*.
7. Changsong Zhou and Jürgen Kurths, “Hierarchical synchronization in networks of oscillators with heterogeneous degrees”, *Chaos* **16**, 015104 (2006): Special Focus Issue on “Stability and Pattern formation in Networks of Dynamical Systems”.
8. A.E. Motter, Changsong Zhou and Jürgen Kurths, “Network synchronization, diffusion, and the paradox of heterogeneity”, *Phys. Rev. E* **71**, 016116 (2005).
Selected for the January 15, 2005 issue of *Virtual Journal of Biological Physics Research*.
9. A.E. Motter, Changsong Zhou and Jürgen Kurths, “Enhancing complex-network synchronization”, *Europhys. Lett.* **69**, 334 (2005).
10. Changsong Zhou and Jürgen Kurths, “Noise-sustained and controlled synchronization of stirred excitable media by external forcing”, *New J. Phys.* **7**, 18 (2005).
11. A. Gámez, Changsong Zhou, A. Timmermann and Jürgen Kurths, “Nonlinear dimensionality reduction in climate data”, *Nonlinear Processes in Geophysics*, **11**, 393-398 (2004).
12. Changsong Zhou and Jürgen Kurths, “Resonant Patterns in Noisy Active Media”, *Phys. Rev. E* **69**, 056210 (2004).
Selected for the June 1, 2004 issue of *Virtual Journal of Biological Physics Research*.

13. Ralf Steuer, Changsong Zhou and Jürgen Kurths, “Constructive effects of fluctuations in genetic and biochemical regulatory systems”, *BioSystems* **72**, 241-251 (2003).
14. Jürgen Kurths and Changsong Zhou, “Noise, Synchronization and Coherence in Chaotic Oscillators”, *I. J. Mod. Phy. B*, **17**, 4023 (2003).
15. Changsong Zhou, Jürgen Kurths, Zoltán Neufeld and István .Z. Kiss, “Noise-Sustained Coherent Oscillation of Excitable Media in a Chaotic Flow”, *Phys. Rev. Lett.* **91**, 150601 (2003).
16. Zoltán Neufeld, István Z. Kiss, Changsong Zhou and Jürgen Kurths, “Synchronization and Oscillator Death in Oscillatory Media with Stirring”, *Phys. Rev. Lett.* **91**, 084101 (2003).
17. Grigory V. Osipov, Bambi Hu, Changsong Zhou, Mikhail V. Ivanchenko, and Jürgen Kurths, “Three Types of Transitions to Phase Synchronization in Chaotic Oscillators”, *Phys. Rev. Lett.* **91**, 024101 (2003).
18. C.S. Zhou, J. Kurths, E. Allaria, S. Boccaletti, R. Meucci and F.T. Arecchi, “Constructive Effects of Noise in Homoclinic Chaotic Systems,” *Phys. Rev. E* **67**, 066220 (2003).
19. Changsong Zhou, Jürgen Kurths and Bambi Hu, “Frequency and Phase Locking of Noise-sustained Oscillations in Coupled Excitable Systems: Array-enhanced Resonances,” *Phys. Rev. E, (Rapid Communication)*, **67**, 030101R (2003).
Selected for the April 1, 2003 issue of the *Virtual Journal of Biological Physics Research*.
20. C.S. Zhou, J. Kurths, E. Allaria, S. Boccaletti, R. Meucci and F.T. Arecchi, “Noise-enhanced Synchronization of Homoclinic Chaos in a CO2 laser,” *Phys. Rev. E, (Rapid Communication)*, **67**, 015205R (2003).
21. István Z. Kiss, Yumei Zhai, John L. Hudson, Changsong Zhou and Jürgen Kurths, “Noise Enhanced Phase Synchronization and Coherence Resonance in Sets of Chaotic Oscillators with Weak Global Coupling”, *Chaos*, **13**, 267 (2003).
22. Changsong Zhou and Jürgen Kurths, “Noise-induced synchronization and coherence resonance of a Hodgkin-Huxley model of thermally sensitive neurons”, *Chaos*, **13**, 401 (2003).
Selected for the March 1, 2003 issue of the *Virtual Journal of Biological Physics Research*.
23. S. Boccaletti, J. Kurths, G. Osipov, D. L. Valladares and C.S. Zhou, “The Synchronization of Chaotic Systems”, *Phys. Rep.* **366** (1-2), pp. 1-101 (2002).
24. Changsong Zhou, Jürgen Kurths, István Z. Kiss, and John L . Hudson, “ Noise Enhanced Phase Synchronization of Chaotic Oscillators”, *Phys. Rev. Lett.* **89**, 014101 (2002).
25. Changsong Zhou and Jürgen Kurths, “ Noise Induced Phase Synchronization and Synchronization Transitions in Chaotic Oscillators”, *Phys. Rev. Lett.* **88**, 230602 (2002).

26. Changsong Zhou and Jürgen Kurths, “Spatio-Temporal Coherence Resonance of Phase Synchronization in Weakly Coupled Chaotic Oscillators”, *Phys. Rev. E (Rapid Communication)* **65**, 040101R (2002).
27. Z.G. Zheng and Changsong Zhou, “Alternate Phase Synchronization in Coupled Chaotic Oscillators”, *Commun. Theor. Phys.* **37**, 419 (2002).
28. Changsong Zhou, Jürgen Kurths and Bambi Hu, “Array-enhanced Coherence Resonance: Nontrivial Effects of Heterogeneity and Spatial Independence of Noise”, *Phys. Rev. Lett.* **87**, 098101 (2001).
29. Bambi Hu and Changsong Zhou, “Synchronization Regimes in Coupled Noisy Excitable Systems”, *Phys. Rev. E* **63**, 026201 (2001).
30. Bambi Hu and Changsong Zhou, “Symmetry-breaking On-off Intermittency Under Modulation: Robustness of Supersensitivity, Resonance and Information Gain”, *Phys. Rev. E* **62**, 1983 (2000).
31. Bambi Hu and Changsong Zhou, “Phase Synchronization in Coupled Nonidentical Excitable Systems and Array Enhanced Coherence Resonance”, *Phys. Rev. E (Rapid Communication)* **61**, 1001R (2000).
32. Z.G. Zheng, G. Hu, Changsong Zhou and B.B. Hu, “Phase synchronization in coupled chaotic systems: Transitions from high- to low-dimensional chaos”, *Acta Physica Sinica*, **49** 2320 (2000).
33. Changsong Zhou and Tianlun Chen, “Chaotic Neural Networks and Chaotic Annealing”, *Neurocomputing*, **30** 293 (2000).
34. Changsong Zhou and C.-H. Lai, “Analysis of Spurious Synchronization with Positive Conditional Lyapunov Exponents in Computer Simulations”, *Physica D* **135**, 1 (2000).
35. Changsong Zhou and C.-H. Lai, “Amplification of Weak Signals and Stochastic Resonance via On-off Intermittency with Symmetry Breaking”, *Phys. Rev. E* **60**, 3928 (1999).
36. Changsong Zhou and C.-H. Lai, “Extracting Messages Masked by Chaotic Signals of Time-delay Systems”, *Phys. Rev. E* **60**, 320 (1999).
37. Changsong Zhou and C.-H. Lai, “Decoding Information by Following Parameter Modulation With Parameter Adaptive Control”, *Phys. Rev. E* **59**, 6629 (1999).
38. Changsong Zhou and C.-H. Lai, “Simple Driven Maps As Sensitive Devices”, *Phys. Rev. E* **59**, 4007 (1999).
39. Changsong Zhou and C.-H. Lai, “Robustness of Supersensitivity to Small Signals in Nonlinear Dynamical Systems”, *Phys. Rev. E (Rapid Communication)* **59**, 6243R (1999).
40. Changsong Zhou, Z. Hou and C.-H. Lai, “Synchronization of Chaos via Optimal Parameter Perturbation Using Short Time Series Data”, *Physica Scripta* **60**, 17 (1999).

41. Changsong Zhou and C.-H. Lai, "Synchronization With Positive Conditional Lyapunov Exponents", *Phys. Rev. E* **58**, 5188 (1998).
42. C.-H. Lai and Changsong Zhou, "Synchronization of Chaotic Maps by Symmetric Common Noise", *Europhys. Lett.* **43**, 376 (1998).
43. Changsong Zhou and Tianlun Chen, "Digital Communication Robust to Transmission Error via Chaotic Synchronization Based on Contraction Map", *Phys. Rev. E* **56**, 1599 (1997).
44. Changsong Zhou and Tianlun Chen, "Chaotic Annealing for Optimization", *Phys. Rev. E* **55**, 2580 (1997).
45. Changsong Zhou and Tianlun Chen, "Robust Communication via Synchronization Between Nonchaotic Strange Attractors", *Europhys. Lett.* **38**, 261 (1997).
46. Changsong Zhou and Tianlun Chen, "Extracting Information Masked by Chaos and Contaminated with Noise: Some Considerations on the Security of Chaotic Communication", *Phys. Lett. A* **234**, 429 (1997).
47. Changsong Zhou and Tianlun Chen, "Robust Communication via Chaotic Synchronization Based on Contraction Maps", *Phys. Lett. A* **225**, 60 (1997).
48. Changsong Zhou, Tianlun Chen and Wuqun Huang, "Chaotic Neural Network with Nonlinear Self-feedback and Its Application in Optimization", *Neurocomputing* **14**, 209 (1997).
49. Zhou Changsong and Chen Tianlun, "Transmitting Multiple Information Signals by a Single Chaotic Carrier", *Chinese Phys. Lett.* **14**, 161 (1997)
50. Zhou Changsong and Chen Tianlun, "Communication via Chaotic Synchronization Based on Contraction Maps", *Chinese. Phys. Lett.* **13**, 572 (1996).
51. Zhou Changsong and Chen Tianlun, "Discontinuity and Complex Behavior in Neural Networks", *Commun. Theor. Phys.* **30**, 49 (1998).
52. Zhou Changsong and Chen Tianlun, "Robust and Secure Method for Transmitting Binary Message Using Binary Chaotic Sequence", *Commun. Theor. Phys.* **29**, 543 (1998).
53. Zhou Changsong and Chen Tianlun, "Controlling Dynamical System to a Variety of Goals", *Commun. Theor. Phys.* **29**, 51 (1998).
54. Zhou Changsong and Chen Tianlun, "Chaotically Temporal Retrieval of Memory", *Commun. Theor. Phys.* **27**, 489 (1997)

Publications in Conference Proceedings (Full Paper)

1. Changsong Zhou and Jürgen Kurths, "Leading Parameters Controlling Synchronizability of Complex Networks", NOLTA Conference Proceedings, Bruges, Belgium, Oct (2005).

2. A.E. Motter, Changsong Zhou, and Jürgen Kurths, “Weighted networks are more synchronizable: how and why”, *AIP Conference Proceedings* **776**, 201 (2005). CNET 2004, Eds.: J.F.F. Mendes et al.
3. Changsong Zhou, Jürgen Kurths, Zoltán Neufeld and István .Z. Kiss, “Noise-sustained oscillation and synchronization of excitable media with stirring”, *Proceedings of SPIE*, **5471**, 193 (2004). Eds.: Z. Gingl et al. SPIE conference on “Noise in Complex Systems and Stochastic Dynamics II”, 26-28 May 2004, Gran Canaria, Spain.

Book and Book Chapters

1. (**Authored book**) G.V. Osipov, J. Kurths and C.S. Zhou, “Synchronization in Oscillatory Networks”, Springer-Verlag, Heidelberg (in press).
2. (**Edited book**) Peter beim Graben, Changsong Zhou, Marco Thiel and Jürgen Kurths (Eds), “Super-Computational Neuroscience: Complex Networks in Brain Dynamics”, based on the lectures given in the summerschool “Complex Brain Networks”, Springer Lecture Notes of Physics (in press).
3. (**Book chapters**)
 - (a) C.S. Zhou, L. Zemanova, and J. Kurths, “Synchronization of Complex Networks”;
 - (b) G. Zamora, C.S. Zhou, and J. Kurths, “Structural characterization of networks: The cat cortex as example”;
 - (c) L. Zemanova, C.S. Zhou and J. Kurths, “Building a large-scale model of cortical neuronal networks”
 In “Super-Computational Neuroscience: Complex Networks in Brain Dynamics”, Springer Lecture Notes of Physics (to appear).

Cites Received

I have fruitful collaborations with the research institutes that I have worked with. The collaborations have resulted in more than 50 papers, including 9 published in *Physical Review Letters* and 5 Rapid Communications in *Physical Review E*. The papers have received more than **765** cites till March 31, 2007 (according to ISI Web of Knowledge). The following is a list of the most cited papers. The Impact Factor (IF) of the journals is also indicated:

1. Changsong Zhou, A.E. Motter and Jürgen Kurths, “Universality in the synchronization of weighted random networks”, *Phys. Rev. Lett.* **96**, 034101 (2006).
Impact Factor: 7.489, Times Cited: 17
2. A.E. Motter, C.S. Zhou and J. Kurths, “Network synchronization, diffusion, and the paradox of heterogeneity”, *Phys. Rev. E* **71**, 016116 (2005).
Impact Factor: 2.418, Times Cited: 52
3. A.E. Motter, C.S. Zhou and J. Kurths, “Enhancing complex-network synchronization”, *Europhys. Lett.* **69**, 334 (2005).
Impact Factor: 2.237, Times Cited: 33
4. S. Boccaletti, J. Kurths, G. Osipov, D. L. Valladares and C.S. Zhou, “The Synchronization of Chaotic Systems”, *Phys. Rep.* **366** (1-2), pp. 1-101 (2002).
Impact Factor: 10.458, Times cited: 336
5. C.S. Zhou, J. Kurths and B.B. Hu, “Array-enhanced Coherence Resonance: Nontrivial Effects of Heterogeneity and Spatial Independence of Noise”, *Phys. Rev. Lett.* **87**, 098101 (2001).
Impact Factor: 7.489, Times Cited: 72
6. C.S. Zhou and C.-H. Lai, “Extracting Messages Masked by Chaotic Signals of Time-delay Systems,” *Phys. Rev. E*, **60**, 320 (1999).
Impact Factor: 2.418, Times Cited: 56.
7. B.B. Hu and C.S. Zhou, “Phase Synchronization in Coupled Nonidentical Excitable Systems and Array Enhanced Coherence Resonance”, *Phys. Rev. E*, **61**, R1001 (2001).
Impact Factor: 2.418, Times Cited: 45
8. C.S. Zhou and J. Kurths, ‘ Noise Induced Phase Synchronization and Synchronization Transitions in Chaotic Oscillators”, *Phys. Rev. Lett.* **88**, 230602 (2002).
Impact Factor: 7.489, Times Cited: 35
9. Grigory V. Osipov, Bambi Hu, Changsong Zhou, Mikhail V. Ivanchenko, and Juergen Kurths, “Three Types of Transitions to Phase Synchronization in Chaotic Oscillators” *Phys. Rev. Lett.* **91**, 024101 (2003).
Impact Factor: 7.489, Times Cited: 33

10. C.-H. Lai and Changsong Zhou, "Synchronization of Chaotic Maps by Symmetric Common Noise", *Europhys. Lett.* **43**, 376 (1998).
Impact Factor: 2.237, Times Cited: 25
11. C.S. Zhou and J. Kurths, I. Z. Kiss and J.L. Hudson, ' Noise Enhanced Phase Synchronization of Chaotic Oscillators", *Phys. Rev. Lett.* **89**, 014101 (2002).
Impact Factor: 7.489, Times Cited: 25
12. C.S. Zhou and T.L. Chen, "Extracting Information Masked by Chaos and Contaminated with Noise: Some Considerations on the Security of Chaotic Communication", *Phys. Lett. A* **234**, 429 (1997).
Impact Factor: 1.550, Times Cited: 24
13. Changsong Zhou and C.-H. Lai, "Decoding Information by Following Parameter Modulation With Parameter Adaptive Control", *Phys. Rev. E* **59**, 6629 (1999).
Impact Factor: 2.418, Times Cited: 20
14. C.S. Zhou, J. Kurths, E. Allaria, S. Boccaletti, R. Meucci and F.T. Arecchi, "Constructive Effects of Noise in Homoclinic Chaotic Systems," *Phys. Rev. E* **67**, 066220 (2003).
Impact Factor: 2.418, Times Cited: 17
15. Z.G. Zheng, G. Hu, Changsong Zhou and B.B. Hu, "Phase synchronization in coupled chaotic systems: Transitions from high- to low-dimensional chaos", *Acta Physica Sinica*, **49** 2320 (2000).
Times Cited: 16
16. Changsong Zhou, Jürgen Kurths and Bambi Hu, "Frequency and Phase Locking of Noise-sustained Oscillations in Coupled Excitable Systems: Array-enhanced Resonances," *Phys. Rev. E, (Rapid Communication)*, **67**, 030101R (2003).
Impact Factor: 2.418, Times Cited: 16
17. Changsong Zhou and Jürgen Kurths, "Noise-induced synchronization and coherence resonance of a Hodgkin-Huxley model of thermally sensitive neurons", *Chaos*, **13**, 401 (2003).
Impact Factor: 1.760, Times Cited: 15
18. Zoltán Neufeld, István Z. Kiss, Changsong Zhou and Jürgen Kurths, "Synchronization and Oscillator Death in Oscillatory Media with Stirring", *Phys. Rev. Lett.* **91**, 084101 (2003).
Impact Factor: 7.489, Times Cited: 15
19. Changsong Zhou and C.-H. Lai, "Robustness of Supersensitivity to Small Signals in Nonlinear Dynamical Systems", *Phys. Rev. E (Rapid Communication)* **59**, 6243R (1999).
Impact Factor: 2.418, Times Cited: 14

20. Changsong Zhou and C.-H. Lai, "Synchronization With Positive Conditional Lyapunov Exponents", *Phys. Rev. E* **58**, 5188 (1998).
Impact Factor: 2.418, Times Cited: 12
21. Changsong Zhou and C.-H. Lai, "Analysis of Spurious Synchronization with Positive Conditional Lyapunov Exponents in Computer Simulations", *Physica D* **135**, 1 (2000).
Impact Factor: 1.863, Times Cited: 12
22. C.S. Zhou, J. Kurths, E. Allaria, S. Boccaletti, R. Meucci and F.T. Arecchi, "Noise-enhanced Synchronization of Homoclinic Chaos in a CO2 laser," *Phys. Rev. E, (Rapid Communication)*, **67**, 015205R (2003).
Impact Factor: 2.418, Times Cited: 13
23. Changsong Zhou and C.-H. Lai, "Amplification of Weak Signals and Stochastic Resonance via On-off Intermittency with Symmetry Breaking", *Phys. Rev. E* **60**, 3928 (1999).
Impact Factor: 2.418, Times Cited: 11
24. Changsong Zhou and Tianlun Chen, "Robust Communication via Synchronization Between Nonchaotic Strange Attractors", *Europhys. Lett.* **38**, 261 (1997).
Impact Factor: 2.237, Times Cited: 11
25. Changsong Zhou and Jürgen Kurths, "Noise-sustained and controlled synchronization of stirred excitable media by external forcing", *New J. Phys.* **7**, 18 (2005).
Impact Factor: 3.585, Times Cited: 8