

List of Publications*

February 26, 2010

Axel G. Rossberg

Under Review

1. A. G. ROSSBERG, T. AMEMIYA, AND K. ITOH, Accurate and fast approximations of moment-generating functions and their inversion for log-normal and similar distributions (2007), <http://axel.rossberg.net/paper/Rossberg2007c.pdf>, under review.

Refereed Journal Articles

2. A. G. ROSSBERG, Å. BRÄNNSTRÖM, AND U. DIECKMANN, How trophic interaction strength depends on traits — A conceptual framework for representing multidimensional trophic niche spaces, *Theor. Ecol.*, 3(1), 13–24 (2010), doi:10.1007/s12080-009-0049-1.
3. C. MULDER, H. A. D. HOLLANDER, J. A. VONK, A. G. ROSSBERG, G. A. J. M. JAGERS OP AKKERHUIS, AND G. W. YEATES, Soil resource supply influences faunal sizespecific distributions in natural food webs, *Naturwissenschaften*, 96(7), 813–826 (2009), doi:10.1007/s00114-009-0539-4.
4. H. SERIZAWA, T. AMEMIYA, A. G. ROSSBERG, AND K. ITOH, Computer simulations of seasonal outbreak and diurnal vertical migration of cyanobacteria, *Limnology*, 9, 185–194 (2008).
5. H. SERIZAWA, T. AMEMIYA, T. ENOMOTO, A. G. ROSSBERG, AND K. ITOH, Mathematical modeling of colony formation in algal blooms: phenotypic plasticity in cyanobacteria, *Ecological Research*, 23, 841–850 (2008).
6. A. G. ROSSBERG, R. ISHII, T. AMEMIYA, AND K. ITOH, The top-down mechanism for body-mass–abundance scaling, *Ecology*, 89(2), 567–580 (2008).
7. A. G. ROSSBERG, Part-whole relations between food webs and the validity of local food-web descriptions, *Ecol. Complex.*, 5(2), 121–131 (2008).
8. A. G. ROSSBERG, Laplace transforms of probability distributions and their inversions are easy on logarithmic scales, *J. Appl. Prob.*, 45(2) (2008).
9. P. KUMAR, U. S. HIREMATH, C. V. YELAMAGGAD, A. G. ROSSBERG, AND K. S. KRISHNAMURTHY, Electroconvection in a homeotropic bent-rod nematic liquid crystal beyond the dielectric inversion frequency, *J. Phys. Chem. B*, 112(32), 9753–9760 (2008).

*The PDF file of this document contains hyperlinks to preprints. See <http://axel.rossberg.net/paper/Publications.pdf> for updates.

10. P. KUMAR, U. S. HIREMATH, C. V. YELAMAGGAD, A. G. ROSSBERG, AND K. S. KRISHNAMURTHY, Drifting periodic structures in a degenerate-planar bent-rod nematic liquid crystal beyond the dielectric inversion frequency, *J. Phys. Chem. B*, 112(31), 9270–9274 (2008).
11. T. AMEMIYA, T. ENOMOTO, A. G. ROSSBERG, T. YAMAMOTO, Y. INAMORI, AND K. ITOH, Stability and dynamical behavior in a lake-model and implications for regime shifts in real lakes ecological modelling, *Ecological Modelling*, 206, 54–62 (2007).
12. S. TATSUMI, M. SANO, AND A. G. ROSSBERG, Observation of stable phase jump lines in convection of a twisted nematic, *Phys. Rev. E*, 73, 011704 (2006).
13. A. G. ROSSBERG, K. YANAGI, T. AMEMIYA, AND K. ITOH, Estimating trophic link density from quantitative but incomplete diet data, *J. Theor. Biol.*, 243(2), 261–272 (2006).
14. A. G. ROSSBERG, H. MATSUDA, T. AMEMIYA, AND K. ITOH, Some properties of the speciation model for food-web structure — Mechanisms for degree distributions and intervality, *J. Theor. Biol.*, 238(2), 401–415 (2006).
15. A. G. ROSSBERG, H. MATSUDA, T. AMEMIYA, AND K. ITOH, Food webs: Experts consuming families of experts, *J. Theor. Biol.*, 241(3), 552–563 (2006), corrigendum: doi:10.1016/j.jtbi.2009.01.006.
16. A. YIMIT, A. G. ROSSBERG, T. AMEMIYA, AND K. ITOH, Thin film composite optical waveguides for sensor applications: a review, *Talanta*, 65(5), 1102–1109 (2005).
17. A. G. ROSSBERG, H. MATSUDA, F. KOIKE, T. AMEMIYA, M. MAKINO, M. MORINO, T. KUBO, S. SHIMOIDE, S. NAKAI, M. KATOH, T. SHIGEOKA, AND K. URANO, A guideline for ecological risk management procedures, *Landscape and Ecological Engineering*, 1(2), 221–228 (2005).
18. A. G. ROSSBERG, H. MATSUDA, T. AMEMIYA, AND K. ITOH, An explanatory model for food-web structure and evolution, *Ecol. Complex.*, 2, 312–321 (2005).
19. T. AMEMIYA, T. ENOMOTO, A. G. ROSSBERG, N. TAKAMURA, AND K. ITOH, Lake restoration in terms of ecological resilience: a numerical study of biomanipulations under bistable conditions, *Ecology and Society*, 10(2), 3. [online] URL:<http://www.ecologyandsociety.org/vol10/iss2/art3/> (2005).
20. A. G. ROSSBERG, P. RIEGLER, F. BUHL, J. HERWIG, AND J. TIMMER, Detection of improper installation from the sensor signal of vortex flowmeters, *Flow Meas. Instrum.*, 15, 29–35 (2004).
21. A. G. ROSSBERG, K. BARTHOLOMÉ, H. U. VOSS, AND J. TIMMER, Phase synchronization from noisy univariate signals, *Phys. Rev. Lett.*, 93(15), 154103 (2004).

22. A. G. ROSSBERG, K. BARTHOLOMÉ, AND J. TIMMER, Data driven optimal filtering for phase and frequency of noisy oscillations: application to vortex flowmetering, *Phys. Rev. E*, 69, 016216 (2004).
23. A. G. ROSSBERG, On the limits of spectral methods for frequency estimation, *Int. J. Bif. Chaos*, 14(6), 2115–2123 (2004).
24. A. G. ROSSBERG, A frequency measure robust to linear filtering, *Prog. Theor. Phys.*, 112(6), 907–919 (2004).
25. N. ÉBER, S. NÉMETH, A. G. ROSSBERG, L. KRAMER, AND Á. BUKA, Magnetic field effect on the thresholds of a sequence of transitions in the electroconvection of a homeotropic nematic liquid crystal, *Phys. Rev. E*, 66, 036213 (2002).
26. N. ÉBER, A. ROSSBERG, A. BUKA, AND L. KRAMER, New scenarios in the electroconvection of a homeotropic nematic liquid crystal, *Mol. Cryst. Liq. Cryst. A*, 351, 161–168 (2001).
27. A. G. ROSSBERG, N. ÉBER, Á. BUKA, AND L. KRAMER, Abnormal rolls and regular arrays of disclinations in homeotropic electroconvection, *Phys. Rev. E*, 61(1), R25–R28 (2000).
28. A. G. ROSSBERG, A twist localizes three-dimensional patterns, *Phys. Rev. E*, 62(4), 4682–4687 (2000).
29. A. G. ROSSBERG, Three-dimensional pattern formation, multiple homogeneous soft modes, and nonlinear dielectric electroconvection, *Phys. Rev. E*, 62, 8114–8132 (2000).
30. J.-H. HUH, Y. HIDAKA, A. G. ROSSBERG, AND S. KAI, Pattern formation of chevrons in the conduction regime in homeotropically aligned liquid crystals, *Phys. Rev. E*, 61(3), 2769–2776 (2000).
31. H. AMM, R. STANNARIUS, AND A. G. ROSSBERG, Optical characterization of chevron texture formation in nematic electroconvection, *Physica D*, 126(3-4), 171–188 (1999).
32. A. G. ROSSBERG AND L. KRAMER, Pattern formation from defect chaos—a theory of chevrons, *Physica D*, 115(1-2), 19–28 (1998).
33. E. PLAUT, W. DECKER, A. G. ROSSBERG, L. KRAMER, W. PESCH, A. BELAIDI, AND R. RIBOTTA, New symmetry breaking in nonlinear electroconvection of nematic liquid crystals, *Phys. Rev. Lett*, 79(12), 2367–2370 (1997).
34. A. G. ROSSBERG AND L. KRAMER, Weakly nonlinear theory of electroconvection in homeotropically oriented nematic liquid crystals, *Phys. Scr.*, T67, 121–124 (1996).
35. A. G. ROSSBERG, A. HERTRICH, L. KRAMER, AND W. PESCH, Weakly nonlinear theory of pattern-forming systems with spontaneously broken isotropy, *Phys. Rev. Lett.*, 76(25), 4729–4732 (1996).

36. A. A. PREDTECHENSKY, W. D. MCCORMICK, J. B. SWIFT, A. G. ROSSBERG, AND H. L. SWINNEY, Traveling wave instability in sustained double-diffusive convection, *Phys. Fluids*, 6(12), 3923–3935 (1994).

Reports, Conference Papers, Book Chapters

37. A. G. ROSSBERG, K. YOSHIDA, AND R. ISHII, Introduction to special section on current food-web theory, *Ecol. Complex.*, 5(1), 71–72 (2008).
38. A. G. ROSSBERG, The problem of biodiversity, in *JST Presto Symposium on Mathematical Sciences towards Environmental Problems*, vol. 136 of *Hokkaido University Technical Report Series in Mathematics*, pp. 20–23, Hokkaido University Sapporo, Sapporo (2008).
39. A. G. ROSSBERG AND K. ITOH, A theory of food-web topology, in *Report on “Environmental Risk Management for Bio/Eco-Systems”*, chap. 24, pp. 183–188, Yokohama National University, Yokohama (2007).
40. A. G. ROSSBERG, Some first principles of complex systems theory, *Publ. RIMS*, 1551, 129–136 (2007).
41. H. MATSUDA, K. URANO, A. G. ROSSBERG, F. KOIKE, T. AMEMIYA, M. MAKINO, M. MORINO, T. KUBO, S. SHIMODE, S. NAKAI, M. KATO, AND T. SHIGEOKA, Basic procedures of risk management, in *Principles and Methods for Ecological Risk Management*, chap. 4, pp. 43–54, Ohmsha (2007), in Japanese.
42. J. HERWIG, P. RIEGLER, R. FRIEDRICHS, AND K. B. A. G. ROSSBERG, Diagnosis in flow: Diagnostic functionalities for vortex flowmeters, *VDI Berichte*, 1829, 777–783+920 (2004).
43. A. G. ROSSBERG, P. RIEGLER, F. BUHL, J. HERWIG, AND J. TIMMER, Detection of improper mounting from the sensor signal of vortex flowmeters, in *Proceedings of the 11th FLOMEKO* (2003).
44. A. G. ROSSBERG, A generic scheme for choosing models and characterizations of complex systems, <http://arXiv.org/physics/0308018> (2003).

Patents

45. F. BUHL, P. RIEGLER, A. ROSSBERG, AND J. TIMMER, Verfahren zur Messung von Durchflüssen, sowie Durchflussmesser, German Patent Office, DE 103 21 003 B4 2008.05.21 (2008).
46. A. ROSSBERG, K. BARTHOLOMÉ, J. TIMMER, J. FRIEDRICHS, AND F. BUHL, Measuring apparatus and method for flow measurement, European Patent Office, EP 1 528 372 A2 (2004).

47. F. BUHL, J. HERWIG, A. PAPENBROCK, P. RIEGLER, A. ROSSBERG, AND J. TIMMER, Method for monitoring a measuring instrument, in particular a flow meter and a measuring device for carrying out said method, World Intellectual Property Organization, WO 2004/006199 A2 (2004).

Theses

48. A. G. ROSSBERG, *The Amplitude Formalism for Pattern-Forming Systems with Spontaneously Broken Isotropy and some Applications*, Dissertation, Universität Bayreuth (1997).
49. A. G. ROSSBERG, *Onset of Double Diffusive Convection in Hele-Shaw Geometry*, Master's thesis, The University of Texas at Austin (1994).