

# Schriftenverzeichnis

## Publikationen in internationalen Journalen

1. W. Ebeling, H. Herzel, and E. E. Selkov. The influence of noise on an oscillating glycolytic model. *studia biophysica*, 98, 147-154 (1983).
2. W. Ebeling, H. Herzel, and H. Engel-Herbert. On the entropy of dissipative structures. *Z. phys. Chem.*, 266, 253-256 (1985).
3. H. Herzel and W. Ebeling. The decay of correlations in chaotic maps. *Phys. Lett. A*, 111, 1-4 (1985).
4. J. Kurths and H. Herzel. Can a solar pulsation event be characterized by a low-dimensional chaotic attractor? *Solar Physics*, 107, 39-45 (1986).
5. W. Ebeling, H. Herzel, W. Richert, and L. Schimansky-Geier. Influence of noise on Duffing - van der Pol oscillators. *Z. Angew. Math. Mech.*, 66, 141-146 (1986).
6. W. Ebeling, H. Engel-Herbert, and H. Herzel. On the entropy of dissipative and turbulent structures. *Ann. der Physik*, 43, 187-195 (1986).
7. Th. Schulmeister and H. Herzel. Chaos in forced Selkov systems. *Z. Angew. Math. Mech.*, 66, 375-378 (1986).
8. J. Kurths and H. Herzel. An attractor in a solar time series. *Physica D*, 25, 165-172 (1987).
9. H. Herzel and Th. Schulmeister. Quantitative description of chaos in a biochemical model. *Sys. Anal. Mod. Sim.*, 4, 113-124 (1987).
10. H. Herzel, W. Ebeling, and Th. Schulmeister. Nonuniform chaotic dynamics and effects of noise in biochemical systems. *Zeitschr. Naturf.*, 42a, 136-142 (1987).
11. H. Herzel and B. Pompe. Effects of noise on a nonuniform chaotic map. *Phys. Lett. A*, 122, 121-125 (1987).
12. W. Ebeling, R. Feistel, and H. Herzel. Dynamics and complexity of biomolecules. *Physica Scripta*, 35, 761-768 (1987).

13. A.S. Anishchenko and H. Herzel. Noise-induced chaos in a system with homoclinic points. *Z. Angew. Math. Mech.*, 68, 317-318 (1988).
14. H. Herzel. Complexity of symbol sequences. *Sys. Anal. Mod. Sim.*, 5, 435-444 (1988).
15. H. Herzel. Stabilization of chaotic orbits by random noise. *Z. Angew. Math. Mech.*, 68, 582-583 (1988).
16. H. Herzel and W. Ebeling. Effects of noise and inhomogeneous attractors in biochemical systems. *Biomed. Biochem. Acta*, 49, 941-949 (1990).
17. W. Mende, H. Herzel, and K. Wermke. Bifurcations and chaos in newborn infant cries. *Phys. Lett. A*, 145, 418-424 (1990).
18. H. Herzel, P. Plath, and P. Svensson. Experimental evidence of homoclinic chaos and type II intermittency during the oxidation of methanol. *Physica D*, 48, 340-352 (1991).
19. M. Göber, H. Herzel, and H. Graf. Dimension-analysis of El Nino-Southern Oscillation time series. *Ann. Geophys.*, 10, 729-734 (1992).
20. H. Herzel. Bifurcations and chaos in voice signals. *Appl. Mech. Rev.* 46, 399-413 (1993).
21. L. Schimansky-Geier and H. Herzel. Positive Lyapunov-exponents in the Kramers- oscillator. *J. Stat. Phys.*, 70, 141-147 (1993).
22. A. Schmitt, H. Herzel, and W. Ebeling. A new method to calculate higher-order entropies from finite samples. *Europhys. Lett.*, 23, 303-309 (1993).
23. H. Herzel, D. Berry, I. Titze, and M. Saleh. Analysis of vocal disorders with methods from nonlinear dynamics. *J. Speech Hearing Research*, 37, 1008-1019 (1994).
24. H. Herzel, A. Schmitt, and W. Ebeling. Finite sample effects in sequence analysis. *Chaos, Solitons, and Fractals*, 4, 97-113 (1994).
25. D. A. Berry, H. Herzel, I. R. Titze, and K. Krischer. Interpretation of biomechanical simulations of normal and chaotic vocal fold oscillations with empirical eigenfunctions. *J. Acoust. Soc. Am.*, 95, 3595-3604 (1994).

26. O. Hess, D. Merbach, H. Herzelt, and E. Schöll. Bifurcations of a 3-torus in twin-stripe semiconductor lasers. *Phys. Lett. A*, 195, 289-294 (1994).
27. H. Herzelt, W. Ebeling, and A. O. Schmitt. Entropies of biosequences - the role of repeats. *Phys. Rev. E*, 50, 5061-5071 (1994).
28. M. M. Hess, M. Gross, and H. Herzelt. Hochgeschwindigkeitsaufnahmen von Schwingungsmoden der Stimmklippen. *Otorhinolaryngologia NOVA*, 4, 307-312 (1994).
29. H. Herzelt and C. Knudsen. Bifurcations in a vocal fold model. *Nonlinear Dynamics*, 7, 53-64 (1995).
30. I. Steinecke and H. Herzelt. Bifurcations in an asymmetric vocal fold model. *J. Acoust. Soc. Am.*, 97, 1874-1884 (1995).
31. H. Herzelt, D. Berry, I. Titze, and I. Steinecke. Nonlinear Dynamics of the Voice: Signal Analysis and Biomechanical Modeling. *CHAOS*, 5, 30-34 (1995).
32. H. Herzelt and I. Große. Measuring correlations in symbolic sequences. *Physica A*, 216, 518-542 (1995).
33. D. Merbach, O. Hess, H. Herzelt, and E. Schöll. Injection-induced bifurcations of transverse spatio-temporal patterns in semiconductor laser arrays. *Phys. Rev. E*, 52, 1571-1578 (1995).
34. H. Herzelt and J. Freund. Chaos, noise, and synchronization reconsidered. *Phys. Rev. E* 52, 3238-3241 (1995).
35. J. Freund and H. Herzelt. The limit entropy for sequences constructed from composites. *Chaos, Solitons, and Fractals*, 7, 49-60 (1996).
36. A. O. Schmitt, W. Ebeling, and H. Herzelt. The modular structure of informational sequences. *BioSystems*, 37, 199-210 (1996).
37. J. C. Crepeau and H. Herzelt. Comparison of Spectral Entropy with Statistical Entropy in Selected Physical Systems. *J. Non-Equilib. Thermodyn.*, 21, 169-174 (1996).
38. D. Berry, H. Herzelt, I. Titze, and B. Story. Bifurcations in excised larynx experiments. *J. of Voice*, 10, 129-138 (1996).

39. M. M. Hess, H. Herzel, O. Köster, F. Scheurich und M. Gross. Endoskopische Darstellung von Stimmlippenschwingungen: Digitale Hochgeschwindigkeitsaufnahmen mit verschiedenen Systemen. *HNO*, 44, 685-693 (1996).
40. H. Seidel, H. Herzel, and D. L. Eckberg. Phase Dependences of the Human Baroreflex. *Am. J. Physiol.*, 41, H 2040-2053 (1997).
41. H. Herzel and I. Große. Correlations in DNA Sequences – the Role of Protein Coding Segments. *Phys. Rev. E*, 55, 800-810 (1997).
42. M. Tigges, P. Mergell, H. Herzel, Th. Wittenberg, and U. Eysholdt. Observation and Modelling of Glottal Biphonation. *Acustica*, 83, 707-714 (1997).
43. H. Herzel and R. Reuter. Whistle Register and Biphonation in a Child's Voice. *Folia phoniatica*, 49, 216-224 (1997).
44. J. Arndt, H. Herzel, S. Bose, M. Falcke, and E. Schöll. Quantification of Transients using Empirical Orthogonal Functions. *Chaos, Solit. & Fractals*, 8, 1911-1920 (1997).
45. P. Mergell and H. Herzel. Modelling Biphonation - The Role of the Vocal Tract. *Speech Communication*, 22, 141-154 (1997).
46. A. O. Schmitt and H. Herzel. Estimating the Entropy of DNA Sequences. *J. theor. Biol.*, 188, 369-377 (1997).
47. O. Weiss and H. Herzel. Measuring Correlations in Protein Sequences. *Z. Phys. Chem.*, 204, 183-197 (1998).
48. I. Wilden, H. Herzel, G. Peters, and G. Tembrock. Subharmonics, Biphonation, and Deterministic Chaos in Mammal Vocalization. *Bioacoustics*, 9, 171-196 (1998).
49. H. Seidel and H. Herzel. Bifurcations in a Nonlinear Model of the Baroreceptor-Cardiac Reflex. *Physica D*, 115, 145-160 (1998).
50. O. Weiss and H. Herzel. Correlations in Protein Sequences and Property Codes. *J. theor. Biol.*, 190, 341-353 (1998).
51. H. Herzel, E. N. Trifonov, O. Weiss, and I. Große. Interpreting Correlations in Biosequences. *Physica A*, 249, 449-459 (1998).
52. D. Holste, H. Herzel, and I. Große. Bayes Estimators of Generalized Entropies. *J. Phys. A*, 31, 20551-20566 (1998).

53. P. Mergell, H. Herzel, Th. Wittenberg, M. Tigges, and U. Eysholdt. Phonation Onset: Modelling and High Speed Glottography. *J. Acoust. Soc. Am.*, 104, 464-470 (1998).
54. D. Hoyer, B. Pompe, H. Herzel, and U. Zwiener. Nonlinear Coordination of the Cardiovascular Autonomic Control. *IEEE Eng. Med. Biol.*, 17, 17-21 (1998).
55. H. Herzel. How to quantify 'small-world networks' ?. *Fractals*, 6, 301-303 (1998).
56. H. Seidel and H. Herzel. Analyzing Entrainment of Heartbeat and Respiration with Surrogates. *IEEE Eng. Med. Biol.*, 17, 54-57 (1998).
57. H. Seidel and H. Herzel. Modeling Wenckebach Rhythms and the Influence of the Baroreceptor-Cardiac Reflex. *IEEE Eng. Med. Biol.*, 17, 22-25 (1998).
58. H. Herzel, O. Weiss, and E. N. Trifonov. Sequence Periodicity in Complete Genomes of Archaea Suggests Positive Supercoiling. *J. Biomol. Struct. Dyn.*, 16, 341-345 (1998).
59. H. Herzel. Nonlinear Dynamics of the Voice: Time Series Analysis, Modeling, and Experiments. *Curr. Topics Acoust. Res.*, 2, 17-30 (1998).
60. R. Reuter, H. Herzel, and R. Orgelmeister. Simulations of Vocal Fold Vibrations with an Analog Circuit. *Int. J. Bifurc. & Chaos*, 9, 1075-1088 (1999).
61. P. Mergell, W. T. Fitch, and H. Herzel. Modeling the Role of Non-Human Vocal Membranes on Phonation. *J. Acoust. Soc. Am.*, 105, 2020-2028 (1999).
62. H. Herzel, O. Weiss, and E. N. Trifonov. 10–11 bp Periodicities in Complete Genomes Reflect Protein Structure and DNA Folding. *Bioinformatics*, 15, 187–193 (1999).
63. H. Herzel and R. Reuter. Quantifying Correlations in Pitch- and Amplitude Contours of Sustained Phonation. *Acustica & Acta Acustica*, 86, 129–135 (2000).
64. I. Grosse, H. Herzel, S. V. Buldyrev, H. E. Stanley. Species Independence of Mutual Information in Coding and Noncoding DNA. *Phys. Rev. E*, 61, 5624–5629 (2000).

65. T. Riede, H. Herzel, D. Mehwald, W. Seidner, E. Trumler, G. Böhme, and G. Tembrock. Nonlinear Phenomena in the Natural Howling of a Dog-Wolf Breed. *J. Acoust. Soc. Am.*, 108, 1435–1442 (2000).
66. J. Schuchhardt, D. Beule, A. Malik, E. Wolski, H. Eickhoff, H. Lehrach, and H. Herzel. Normalization Strategies for cDNA-Arrays. *Nucl. Acids Res.*, 28: e47 i–v (2000).
67. O. Weiss, M. Jimenez-Montano, H. Herzel. Information content of protein sequences. *J. theor. Biol.*, 206, 379–386 (2000).
68. D. Holste, O. Weiss, I. Große, and H. Herzel. Are non-coding sequences of *Rickettsia prowazekii* remnants of ‘neutralized’ genes ? *J. Mol. Evol.*, 51, 353–362 (2000).
69. D. Holste, I. Grosse, S. V. Buldyrev, H. E. Stanley, H. Herzel. Optimization of Protein Coding Measures using Positional Dependence of Nucleotide Frequencies. *J. theor. Biol.*, 206, 525–537 (2000).
70. P. Mergell, H. Herzel, and I. R. Titze. Irregular Vocal Fold Vibration – High-Speed Observation and Modeling. *J. Acoust. Soc. Am.*, 108, 2996–3002 (2000).
71. D. Holste, I. Grosse, and H. Herzel. Entropy Estimation from Finite Data Samples. *InterJournal*, 267, 1–8 (2000).
72. H. Herzel, D. Beule, S. Kielbasa, J. Korbel, C. Sers, A. Malik, H. Eickhoff, H. Lehrach, and J. Schuchhardt. Extracting Information from cDNA Arrays. *CHAOS*, 11, 98–107 (2001).
73. D. Holste, I. Grosse, and H. Herzel. Statistical Analysis of the DNA Sequence of Human Chromosome 22. *Phys. Rev. E*, 64: 041917 (2001).
74. Sz. M. Kielbasa, J. O. Korbel, D. Beule, J. Schuchhardt, and H. Herzel. Combining frequency and positional information to predict transcription factor binding sites. *Bioinformatics*, 17, 1019–1026 (2001).
75. T. Riede, H. Herzel, K. Hammerschmidt, L. Brunnberg, and G. Tembrock. The harmonics-to-noise ratio applied to dog barks. *J. Acoust. Soc. Am.*, 110, 2191–2197 (2001).
76. J. Neubauer, H. Herzel, P. Mergell, and U. Eysholdt. Spatio-temporal analysis of irregular vocal fold oscillations: Biphonation due to desynchronization of spatial modes. *J. Acoust. Soc. Am.*, 110, 3179–3192 (2001).

77. R. Mrowka, A. Patzak, and H. Herzel. Is there a bias in proteome research? *Genome Research*, 11, 1971–1973 (2001).
78. W. T. Fitch, J. Neubauer, and H. Herzel. Calls out of Chaos: The Adaptive Significance of Nonlinear Phenomena in Mammalian Vocal Production. *Animal Behav.*, 63, 407–418 (2002).
79. C. Zemlin, E. Storch, and H. Herzel. Alternans and 2:1 rhythms in an ionic model of heart cells. *Biosystems*, 66, 1–10 (2002).
80. U. Reineke, C. Ivascu, M. Schlieff, C. Landgraf, S. Gericke, G. Zahn, H. Herzel, R. Volkmer-Engert, J. Schneider-Mergener. Identification of distinct antibody epitopes and mimotopes from a peptide array of 5520 randomly generated sequences. *J. Immunological Methods*, 267, 37–51 (2002).
81. I. Tokuda, T. Riede, J. Neubauer, M. J. Owren, and H. Herzel. Non-linear analysis of irregular animal vocalizations. *J. Acoust. Soc. Am.*, 111, 2908–2919 (2002).
82. J. Vogel, I. Axmann, H. Herzel, W. Hess. Experimental and computational analysis of transcriptional start sites in the cyanobacterium. *Nucleic Acids Research*, 31, 2890–2899 (2003).
83. N. Bluethgen, H. Herzel. How robust are switches in intracellular signaling cascades? *J. theor. Biol.*, 225, 293–300 (2003).
84. D. Holste, I. Grosse, S. Beirer, P. Schieg, H. Herzel. Repeats and correlations in human DNA sequences. *Phys. Rev. E*, 67: 061913 (2003).
85. M. Edgerton, J. Neubauer, and H. Herzel. Nonlinear Phenomena in Contemporary Vocal Musical Composition and Performance. *Perspectives of New Music*, 41, 30–65 (2003).
86. G. Peters, M. L. East, H. Herzel, J. R. Henschel, M. G. L. Mills, K. Wilhelm, and H. Hofer. Spotted hyaena whoops: frequent incidence of vocal instabilities in a mammalian loud call. *Bioacoustics*, 14, 99–109 (2004).
87. N. Bluethgen, S. M. Kielbasa, B. Cajavec, and H. Herzel. HOMGL – comparing genelists across species and with different accession numbers. *Bioinformatics*, 20, 125–126 (2004).
88. J. Neubauer, M. Edgerton, and H. Herzel. Nonlinear Phenomena in Contemporary Vocal Music. *J. of Voice*, 18, 1–12 (2004).

89. M. Swat, A. Kel, and H. Herzelt. Bifurcation Analysis of the Regulatory Modules of the Mammalian G1/S Transition. *Bioinformatics*, 20, 1506–1511 (2004).
90. S. M. Kielbasa, N. Bluethgen, C. Sers, R. Schaefer, and H. Herzelt. Prediction of cis-regulatory elements of coregulated genes. *Genome Informatics*, 15, 117–124 (2004).
91. K. K. Challapalli, C. Zabel, J. Schuchhardt, A. M. Kaindl, J. Klose, H. Herzelt. High reproducibility of large gel two dimensional electrophoresis. *Electrophoresis*, 25, 3040–3047 (2004).
92. R. Mrowka, A. Patzak, H. Herzelt, and D. Holste. Sequence-related human protein cluster by degree of evolutionary conservation. *Phys. Rev. E*, 70: 051908 (2004).
93. P. Schieg and H. Herzelt. Periodicities of 10–11 bp as Indicators of the Supercoiled State of Genomic DNA. *J. Mol. Biol.*, 343, 891–901 (2004).
94. S. Becker-Weimann, J. Wolf, H. Herzelt, and A. Kramer. Modeling Feedback Loops of the Mammalian Circadian Oscillator. *Biophys. J.*, 87, 3023–3034 (2004).
95. S. Becker-Weimann, J. Wolf, A. Kramer, and H. Herzelt. A model of the mammalian circadian oscillator including the REV-ERB $\alpha$  module. *Genome Informatics*, 15, 3–12 (2004).
96. F. Geier, S. Becker-Weimann, A. Kramer, and H. Herzelt. Entrainment in a Model of the Mammalian Circadian Oscillator. *J. Biol. Rhythms*, 20, 83–93 (2005).
97. M. Truss, M. Swat, S. M. Kielbasa, R. Schafer, H. Herzelt, and C. Hagemeyer. HuSiDa – the human siRNA database: an open-access database for published functional siRNA sequences and technical details of efficient transfer into recipient cells. *Nucleic Acids Research*, 33, D108–D111 (2005).
98. I. Tokuda and H. Herzelt. Detecting synchronizations in an asymmetric vocal fold model from time series data. *Chaos*, 15: 013702 (2005).
99. N. Bluethgen, S. M. Kielbasa, and H. Herzelt. Inferring combinatorial regulation of transcription in silico. *Nucleic Acids Research*, 33, 272–279 (2005).



100. D. Gonze, S. Bernard, C. Waltermann, A. Kramer and H. Herzel. Spontaneous synchronization of coupled circadian oscillators. *Biophys. J.*, 89, 120–129 (2005).
101. N. Bluethgen, K. Brand, B. Cajavec, M. Swat, H. Herzel, and D. Beule. Biological profiling of Gene Groups Utilizing Gene Ontology. *Genome Informatics*, 16, 106–115 (2005).
102. S. Legewie, N. Bluethgen, and H. Herzel. Quantitative Analysis of Ultrasensitive Responses. *FEBS J.*, 272, 4071–4079 (2005).
103. B. Cajavec, S. Bernard, and H. Herzel. Aggregation in Huntington’s Disease: Insights Through Modelling. *Genome Informatics*, 16, 262–271 (2005).
104. I. M. Axmann, P. Kensche, J. Vogel, S. Kohl, H. Herzel, and W. R. Hess. Identification of cyanobacterial non-coding RNAs by comparative genome analysis. *Genome Biology*, 6: R73 (2005).
105. S. Kielbasa, D. Gonze, and H. Herzel. Measuring similarities between transcription factor binding sites. *BMC Bioinformatics*, 6: 237 (2005).
106. S. Legewie, N. Bluethgen, R. Schafer, and H. Herzel. ULTRASENSITIZATION Switch-like Regulation of Cellular Signalling by Transcriptional Induction. *PLoS Computational Biology*, 1: e54 (2005).
107. O. R. Bandapalli, M. Geheeb, D. Kobelt, K. Kuehnle, S. Elezkurtaj, J. Herrmann, A. M. Gressner, R. Weisskirchen, D. Beule, N. Bluethgen, H. Herzel, C. Franke, and K. Brand. Global analysis of host tissue gene expression in the invasive front of colorectal liver metastases. *Int. J. of Cancer*, 118, 74–89 (2006).
108. S. Bernard, B. Cajavec, L. Pujou–Menjouet, M. C. Mackey, and H. Herzel. Modeling transcriptional feedback loops: The role of Gro/TLE1 in Hes1 oscillations. *Phil. Trans. Royal Soc.*, 364, 1155–1170 (2006).
109. B. Cajavec, H. Herzel, and S. Bernard. Clustered neuronal death contributes to variance of age at onset in Huntington’s disease. *Neurogenetics*, 7, 21–25 (2006).
110. P. Hammerstein, E. H. Hagen, A. V. M. Herz, and H. Herzel. Robustness: A key to evolutionary design. *Biological Theory*, 1, 90–93 (2006).
111. N. Bluethgen, F. J. Bruggemann, S. Legewie, H. Herzel, H. V. Westerhoff, and B. N. Kholodenko. Effects of Sequestration on Signal Transduction Cascades. *FEBS J.*, 273, 895–906 (2006).

112. H. Hatzikirou, W. T. Fitch, and H. Herzel. Voice instabilities due to source-tract interactions. *Acustica*, 92, 468–475 (2006).
113. L. Kumar, M. Futschik, and H. Herzel. DNA Motifs and Sequence Periodicities. *In Silico Biology*, 6: 71–78 (2006).
114. P. Lund, K. Weisshaupt, T. Mikeska, D. Jammias, X. Chen, R.-J. Kuban, U. Ungethuem, U. Krapfenbauer, H. Herzel, R. Schaefer, J. Walter, and C. Sers. Oncogenic HRAS suppresses clusterin expression through promoter hypermethylation. *Oncogene*, 25, 4880–4893 (2006).
115. S. Legewie, N. Bluethgen, and H. Herzel. Mathematical Modeling Identifies Inhibitors of Apoptosis (IAPs) as Mediators of Positive Feedback and Bistability. *PLoS Computational Biology*, 9, e120 (2006). [highlighted in *Science* 314, 389 (2006) and in *Nature* 445, 823 (2007)]
116. R. Zaccarelli, C. Elemans, W. T. Fitch, and H. Herzel. Modelling Bird Songs: Voice Onset, Overtones and Registers. *Acustica*, 92, 741–748 (2006).
117. G. Chaurasia, H. Herzel, E. Wanker, and M. Futschik. Systematic Functional Assessment of Human Protein-Protein Interaction Maps. *Genome Informatics*, 17, 36–45 (2006).
118. K. Vanselow, J. T. Vanselow, P. O. Westermark, S. Reischl, B. Maier, T. Korte, A. Herrmann, H. Herzel, A. Schlosser, and A. Kramer. Differential effects of PER2 phosphorylation: molecular basis for the human familial advanced sleep phase syndrome (FASPS). *Genes and Development*, 20, 2660–2672 (2006).
119. S. Bernard and H. Herzel. Why do cells cycle with a 24 hour period? *Genome Informatics*, 17, 72–79 (2006).
120. G. Chaurasia, Y. Iqbal, C. Haenig, H. Herzel, E. E. Wanker, and M. E. Futschik. UniHI: An Entry Gate to the Human Protein Interactome. *Nucleic Acids Research*, 35, D590–D594 (2007).
121. S. Clodong, U. Duehring, L. Kronk, A. Wilde, I. Axmann, H. Herzel, and M. Kollmann. Functioning and robustness of a bacterial circadian clock. *Molecular Systems Biology*, 3:90 (2007).
122. M. E. Futschik, G. Chaurasia, E. Wanker, and H. Herzel. Comparison of Human Protein-Protein Interaction Maps. *Bioinformatics*, 23, 605–611 (2007).

123. S. Bernard, D. Gonze, B. Cajavec, H. Herzel, and A. Kramer. Synchronization-Induced Rhythmicity of Circadian Oscillators in the Suprachiasmatic Nucleus. *PLoS Computational Biology*, 3:e68 (2007).
124. G. Chaurasia, Y. Iqbal, C. Haenig, H. Herzel, E. E. Wanker, and M. E. Futschik. Flexible web-based integration of distributed large-scale human protein interaction maps. *J. Integrative Bioinformatics*, 4:51 (2007).
125. I. Tokuda, J. Horacek, J. G. Svec, and H. Herzel. Comparison of biomechanical modeling of register transitions and voice instabilities with excised larynx experiments. *J. Acoust. Soc. Am.*, 122, 519–531 (2007).
126. M. Futschik, G. Chaurasia, and H. Herzel. Graph theoretical comparison reveals structural divergence of human protein interaction networks. *Genome Informatics*, 18, 141–151 (2007).
127. S. Legewie, B. Schoeberl, N. Bluethgen, and H. Herzel. Competing docking interactions can bring about bistability in the MAPK cascade. *Biophys. J.*, 93, 2279–2288 (2007).
128. S. Kielbasa, H. Herzel, and I. Axmann. Regulatory elements of marine cyanobacteria. *Genome Informatics*, 18, 1–11 (2007).
129. R. Mrowka, A. Steege, C. Kaps, H. Herzel, B. J. Thiele, P. B. Persson, and N. Bluethgen. Dissecting the action of an evolutionary conserved non-coding region on renin promoter activity. *Nucleic Acids Research*, 35, 5120–5129 (2007).
130. I. Axmann, S. Legewie, and H. Herzel. A minimal circadian clock model. *Genome Informatics*, 18, 54–64 (2007).
131. S. Reischl, K. Vanselow, P. O. Westermark, N. Thierfelder, B. Maier, H. Herzel, and A. Kramer. beta-TrCP1 mediated degradation of PERIOD2 is essential for circadian dynamics. *J. Biol. Rhythms*, 22, 375–386 (2007).
132. Promoter analysis of mammalian clock controlled genes. K. Bozek, S. Kielbasa, A. Kramer, and H. Herzel. *Genome Informatics*, 18, 65–74 (2007).
133. C. Elemans, R. Zaccarelli, and H. Herzel. Biomechanics and control of vocalisation in a non-songbird. *J. Royal Soc. Interface*, 5, 691–703 (2008).

134. I. Tokuda, J. Horacek, J. G. Svec, and H. Herzel. Bifurcations and chaos in register transitions of excised larynx experiments. *Chaos*, 18:013102 (2008).
135. S. A. Brown, D. Kunz, A. Dumas, P. O. Westermark, K. Vanselow, A. Tilmann-Wahnschaffe, H. Herzel, and A. Kramer. Molecular Insights into Human Daily Behavior. *Proc. Nat. Acad. Sci. USA*, 105, 1602–1607 (2008).
136. M. Futschik and H. Herzel. Are we overestimating the number of cell-cycling genes? The impact of background models on time series analysis. *Bioinformatics*, 24, 1063–1069 (2008).
137. J. C. W. Locke, P. O. Westermark, A. Kramer, and H. Herzel. Global parameter search reveals design principles of the mammalian circadian clock. *BMC Systems Biology*, 2:22 (2008).
138. A. Chauhan, S. Legewie, P. O. Westermark, S. Lorenzen, and H. Herzel. A mesoscale model for G1/S phase transition in liver regeneration. *J. Theor. Biol.*, 252, 465–473 (2008).
139. S. Legewie, H. Herzel, H. V. Westerhoff, and N. Bluethgen. Recurrent design patterns in the feedback regulation of the mammalian signaling network. *Mol. Syst. Biol.*, 4:190 (2008).
140. M. Benary, H. Bendfeldt, R. Baumgrass, and H. Herzel. Modeling IL-2 gene expression in human regulatory T-cells. *Genome Informatics*, 20, 222–230 (2008).
141. S. Legewie, D. Dienst, A. Wilde, H. Herzel, and I. M. Axmann. Small RNAs establish delays and temporal thresholds in gene expression. *Biophys. J.*, 95, 3232–3238 (2008).
142. H. Herzel and N. Bluethgen. Mathematical models in mammalian cell biology. *Genome Biology*, 9:316 (2008).
143. S. Legewie, C. Sers, and H. Herzel. Kinetic mechanisms for overexpression insensitivity and oncogene cooperation. *FEBS Lett.*, 583, 93–96 (2009).
144. N. Bluethgen, S. Legewie, S. M. Kielbasa, A. Schramme, O. Tchernitza, J. Keil, A. Solf, M. Vingron, R. Schaefer, H. Herzel, and C. Sers. A systems biological approach suggests that transcriptional feedback regulation by dual-specificity phosphatase 6 shapes extracellular signal-related kinase activity in RAS-transformed fibroblasts. *FEBS Journal*, 276, 1024–1035 (2009).

145. A. Granada, R. M. Hennig, B. Ronacher, A. Kramer, and H. Herzel. Phase response curves elucidating the dynamics of coupled oscillators. *Methods Enzymol.*, 454, 1–27 (2009).
146. K. Bozek, A. Relogio, S. M. Kielbasa, M. Heine, C. Dame, A. Kramer, and H. Herzel. Regulation of clock-controlled genes in mammals. *PLoS ONE*, 4:e4882 (2009).
147. O. Wolkenhauer, D. Fell, P. De Meyts, N. Bluethgen, H. Herzel, N. Le Novere, T. Hoefler, K. Schuerrle, and I. van Leeuwen. Advancing systems biology for medical applications. *IET Systems Biology*, 3, 131–136 (2009).
148. A. Granada and H. Herzel. How to achieve fast entrainment? The timescale to synchronization. *PLoS ONE*, 4:e7057 (2009).
149. P. Westermarck, D. K. Welsh, H. Okamura, and H. Herzel. Quantification of circadian rhythms in single cells. *PLoS Computational Biology*, 5:e1000580 (2009).
150. Y.H. Lee, M. Benary, R. Baumgrass, and H. Herzel. Prediction of regulatory transcription factors in T helper cell differentiation and maintenance. *Genome Informatics*, 22, 84–94 (2010).
151. O. Wolkenhauer, C. Auffray, S. Baltrusch, N. Bluethgen, H. Byrne, M. Cascante, A. Ciliberto, T. Dale, D. Drasdo, D. Fell, J. Ferrell Jr., D. Gallahan, R. Gatenby, U. Guenther, B. D. Harms, H. Herzel, C. Jung-hanns, M. Kunz, I. van Leeuwen, P. Lenormand, F. Levi, M. Linnebacher, J. Lowengrub, P. K. Maini, A. Malik, K. Rateitschak, O. Sansom, R. Schaefer, K. Schuerrle, C. Sers, S. Schnell, D. Shibata, J. Tyson, J. Vera, M. White, B. Zhivotovsky, and R. Jaster. Systems biologists seek fuller integration of systems biology approaches in new cancer research programs. *Cancer Research*, 70, 12–13 (2010).
152. I.T. Tokuda, M. Zemke, M. Kob, and H. Herzel. Biomechanical modeling of registertransitions and the role of vocal tract resonators. *J. Acoust. Soc. Am.*, 127, 1528–1536 (2010).
153. S. Bernard, B. Cajavec Bernard, F. Levi, and H. Herzel. Tumor growth rate determines the timing of optimal chronomodulated treatment schedules. *PLoS Computational Biology*, 6: e1000712 (2010).
154. K. Bozek, A. L. Rosahl, S. Gaub, S. Lorenzen, and H. Herzel. Circadian transcription in liver. *Biosystems*, 102, 61–69 (2010).

155. U. Abraham, A. E. Granada, P. O. Westermarck, M. Heine, A. Kramer, and H. Herzl. Coupling governs entrainment range of circadian clocks. *Molecular Systems Biology*, 6: 438 (2010).
156. K. Juerchott, R. J. Kuban, T. Krech, N. Bluethgen, U. Stein, W. Walther, C. Friese, S. M. Kielbasa, U. Ungethuem, P. Lund, T. Knoesel, W. Kemmner, M. Morkel, J. Fritzmann, P. M. Schlag, W. Birchmeier, T. Krueger, S. Sperling, C. Sers, H. D. Royer, H. Herzl, and R. Schaefer. Identification of Y-box binding protein 1 as a core regulator of MEK/ERK pathway-dependent gene signatures in colorectal cancer. *PLoS Genet.*, 6: e1001231 (2010).
157. A. E. Granada, T. Cambras, A. Diez-Noguera, and H. Herzl. Circadian desynchronization. *J. Royal Society Interface Focus*, 1, 153–166 (2011).
158. M. Kob, N. Henrich, D. Howard, H. Herzl, I. Tokuda, and J. Wolfe. Analysing and understanding the singing voice: recent progress and open questions. *Current Bioinformatics*, 6, 362–374 (2011).
159. A. Chauhan, S. Lorenzen, H. Herzl, and S. Bernard. Regulation of mammalian cell cycle progression in the regenerating liver. *J. Theor. Biol.*, 283, 103–112 (2011).
160. K. L. Jost, S. Haase, D. Smeets, N. Schrode, J. M. Schmiedel, B. Bertulat, H. Herzl, M. Cremer, M. C. Cardoso. 3D-Image analysis platform monitoring relocation of pluripotency genes during reprogramming. *Nucleic Acids Res.*, 39:e113 (2011).
161. G. Bordyugov, A. E. Granada, and H. Herzl. How coupling determines the entrainment of circadian clocks. *Eur. Phys. J. B*, 82, 227–234 (2011).
162. A. Relogio, P. O. Westermarck, T. Wallach, K. Schellenberg, A. Kramer, and H. Herzl. Tuning the Mammalian Circadian Clock: Robust Synergy of Two Loops. *PLoS Computational Biology*, 7:e100230 (2011).
163. H. Bendfeldt, M. Benary, T. Scheel, S. Frischbutter, A. Abajyan, A. Radbruch, H. Herzl, and R. Baumgrass. Stable IL-2 decision making by endogenous c-Fos amounts in peripheral memory T-helper cells. *J. Biol. Chem.*, 287, 18386–18397 (2012).
164. I. Stelnic-Klotz, S. Legewie, O. Tchernitsa, F. Witzel, B. Klinger, C. Sers, H. Herzl, N. Bluethgen, and R. Schafer. Reverse engineering a hierarchical regulatory network downstream of oncogenic KRAS. *Molecular Systems Biology*, 8:601 (2012).

165. H. Bendfeldt, M. Benary, T. Scheel, K. Steinbrink, A. Radbruch, H. Herzelt, and R. Baumgrass. IL-2 Expression in Activated Human Memory FOXP3(+) Cells Critically Depends on the Cellular Levels of FOXP3 as Well as of Four Transcription Factors of T Cell Activation. *Front. Immunol.*, 3:264 (2012).
166. A. Korenčič, G. Bordyugov, R. Košir, D. Rozman, M. Goličnik, and H. Herzelt. The Interplay of *cis*-regulatory Elements Rules Circadian Rhythms in Mouse Liver. *PLoS One*, 7:e46835 (2012).
167. A. Granada, G. Bordyugov, A. Kramer, and H. Herzelt. Human Chronotypes from a Theoretical Perspective. *PLoS One*, 8:e59464 (2013).
168. P. O. Westermark and H. Herzelt. Mechanism for 12 hr rhythm generation by the circadian clock. *Cell Reports* 3, 1228-1238 (2013).
169. A. Erzberger, G. Hampp, A. E. Granada, U. Albrecht, and H. Herzelt. Genetic redundancy strengthens the circadian clock leading to a narrow entrainment range. *J. Royal Society Interface* 10:20130221 (2013).
170. C. T. Herbst, H. Herzelt, J. G. Svec, M. T. Wyman, and W. T. Fitch. Visualization of system dynamics using phasegrams. *J. Royal Society Interface* 10:20130288 (2013).
171. W. Gottstein, S. Mueller, H. Herzelt, and R. Steuer. Elucidating the adaptation and temporal coordination of metabolic pathways using in-silico evolution. *Biosystems* 117, 68–76 (2014).
172. B. Anathasubramaniam, E. Herzog, and H. Herzelt. Timing of neuropeptide coupling determines synchrony and entrainment in the mammalian circadian clock. *PLoS Computational Biology* 10:e1003565 (2014).
173. A. Relogio, P. Thomas, P. Medina-Perez, S. Reischl, S. Bervoets, E. Gloc, P. Riemer, S. Mang-Fateh, B. Maier, R. Schaefer, U. Leser, H. Herzelt, A. Kramer, and C. Sers. RAS-mediated deregulation of the circadian clock in cancer. *PLoS Genetics* 10:e1004338 (2014).
174. A. Korencic, R. Kosir, G. Bordyugov, R. Lehmann, D. Rozman, and H. Herzelt. Timing of circadian genes in mammalian tissues. *Scientific Reports* 4:5782 (2014).
175. R. Lehmann, R. Machne, and H. Herzelt. The structural code of cyanobacterial genomes. *Nucleic Acids Res.* 42, 8873–8883 (2014).

176. B. Ananthasubramaiaam, and H. Herzl. Positive feedback promotes oscillations in negative feedback loops. *PLoS One* 9:e104761 (2014).
177. A. G. Petzoldt, Y. H. Lee, O. Khorramshahi, E. Reynolds, A. J. Plested, H. Herzl, and S. J. Sigrist. Gating characteristics control glutamate receptor distribution and trafficking in vivo. *Current Biol.* 24:2059–2065 (2014).
178. R. Lehmann, L. Childs, P. Thomas, M. Abreu, L. Fuhr, H. Herzl, U. Leser, and A. Relogio. Assembly of a comprehensive regulatory network for the mammalian circadian clock: a bioinformatics approach. *PLoS One*, 10:e0126283 (2015).
179. C. Schmal, J. Myung, H. Herzl, and G. Bordyugov. A Theoretical Study on Seasonality. *Frontiers in Neurology*, 6:94 (2015).
180. G. Bordyugov, U. Abraham, A. Granada, P. Rose, K. Imkeller, A. Kramer, and H. Herzl. Tuning the Phase of Circadian Entrainment. *J. Royal Society Interface*, 12:0282 (2015).
181. Z. Fang, K. Hecklau, F. Gross, I. Bachmann, M. Venzke, M. Karl, J. Schuchhardt, A. Radbruch, H. Herzl, and R. Baumgrass. Transcription factor co-occupied regions in the murine genome constitute T-helper-cell subtype-specific enhancers. *Eur. J. Immunol.*, 45:3150–3157 (2015).
182. A. Bhargava, H. Herzl, and B. Ananthasubramaniam. Mining for novel candidate clock genes in the circadian regulatory network. *BMC Syst. Biol.*, 9:78 (2015).
183. I. T. Tokuda, D. Ono, B. Ananthasubramaniam, S. Honma, K. Honma, and H. Herzl. Coupling Controls the Synchrony of Clock Cells in Development and Knockouts. *Biophys J.*, 109:2159-2170 (2015).
184. C. T. Herbst, J. Unger, H. Herzl, J. G. Svec, and J. Lohscheller. Phasogram analysis of vocal fold vibration documented with laryngeal high-speed video endoscopy. *J. Voice*, 30:771 (2016).
185. C. H. Gabriel, F. Gross, M. Karl, H. Stephanowitz, A. F. Hennig, M. Weber, S. Gryzik, I. Bachmann, K. Hecklau, J. Schuchhardt, H. Herzl, A. Radbruch, E. Krause, and R. Baumgrass. Identification of Novel Nuclear Factor of Activated T Cell (NFAT)-associated Proteins in T Cells. *J. Biol. Chem.*, 291:24172-24187 (2016).



186. J. P. Pett, A. Korencic, F. Wesener, A. Kramer, and H. Herzl. Feedback Loops of the Mammalian Circadian Clock Constitute Repressor. *PLoS Computational Biology*, 12:e1005266 (2016).
187. D. Druzd et al. Lymphocyte Circadian Clocks Control Lymph Node Trafficking and Adaptive Immune Responses. *Immunity*, 46:120-132 (2017).
188. G. Moenke, E. Cristiano, A. Finzel, D. Friedrich, H. Herzl, M. Falcke, and A. Loewer. Excitability in the p53 network mediates robust signaling with tunable activation thresholds in single cells. *Scientific Reports*, 7:46571 (2017).
189. C. Schmal, J. Myung, H. Herzl, and G. Bordyugov. Moran's I quantifies spatio-temporal pattern formation in neural imaging data. *Bioinformatics*, 33:3072–3079 (2017).
190. M. E. Hughes et al. Guidelines for Genome-Scale Analysis of Biological Rhythms. *J. Biol. Rhythms*, 32:380–393 (2017).
191. U. Abraham, J. .K. Schlichting, A. Kramer, and H. Herzl. Quantitative analysis of circadian single cell oscillations in response to temperature. *PLoS One*, in press.
192. C. Schmal, E. D. Herzog, and H. Herzl. Measuring Relative Coupling Strength in Circadian Systems *J. Biol. Rhythms*, in press.

## Publikationen in Sammelbänden

1. W. Ebeling, H. Herzl, and L. Schimansky-Geier. Stochastic description of a biochemical oscillator. In *Proc. 10th Intern. Conf. on Nonlinear Oscillations*. Varna, 1984.
2. H. Engel-Herbert, W. Ebeling, and H. Herzl. The influence of fluctuations on sustained oscillations. In *Temporal Order*. Springer-Verlag, 1984, pp. 144–152.
3. H. Herzl, W. Ebeling, L. Schimansky-Geier, and E. E. Selkov. The influence of noise on a biochemical oscillator of Volterra type. In *Methods and Applications in Connection with Lotka-Volterra Equations in Systems Analysis*. Akademie-Verlag, 1985.
4. W. Ebeling, H. Herzl, and E. E. Selkov. Theory of stochastic biochemical oscillations. In *Proc. 16th FEBS–Congress Part C*. VNU Science Press, 1985, pp. 443–449.

5. H. Herzel, W. Ebeling, and Th. Schulmeister. Quantitative description of chaos in a biochemical system. In *Systems Analysis and Simulation*. Akademie-Verlag, 1985, pp. 474–477.
6. W. Ebeling, H. Engel-Herbert, and H. Herzel. Thermodynamic aspects of selforganization. In *Selforganization by Nonlinear Irreversible Processes*. Springer-Verlag, 1986, pp. 2–16.
7. H. Herzel. Beschreibung von deterministischem Chaos mit informations- theoretischen Methoden. *Wiss. Zeitschr. Humb. Univ. Math.-Nat. Reihe*, 35, 440–449 (1987).
8. H. Herzel. Deterministisches Chaos in biologischen Systemen. *Wiss. Zeitschr. Humb. Univ. Math.-Nat. Reihe*, 36, 633–641 (1987).
9. H. Herzel and Th. Schulmeister. Chaotic dynamics and fluctuations in a biochemical system. In *Dynamical Systems and Environmental Models*. Akademie-Verlag, 1987, pp. 85–94.
10. W. Ebeling, H. Herzel, and L. Schimansky-Geier. Stochastic and chaotic processes in biochemical systems. In *From Chemical to Biological Organization*. Springer-Verlag, 1988, pp. 166–176.
11. M. Peschel, H.M. Voigt, W. Mende, J. Wolf, H. Herzel, and F. Breiten-ecker. Chaotische Schalter - ein neuer Zugang zur Modellierung von Neuronennetzen. *msr*, 31, 36–38 (1988).
12. H. Herzel. Komplexität von Sequenzen - statistische Analyse von Biosequenzen, Sprachen und chaotischen Symbolfolgen. *Math.-Naturwiss. Manusk. Humboldt Univ.*, 1, 5–28 (1989).
13. H. Herzel. Zustandsmodelle von Bioreaktoren. *Math.-Naturwiss. Manusk. Humboldt Univ.*, 1, 33–40 (1989).
14. H. Herzel, J. Kurths, P.S. Landa, and M.G. Rosenblum. New aspects of detecting chaos in a time series. In *Irreversible Processes and Selforganization*. Teubner-Verlag, 1989, pp. 65–75.
15. M. Peschel, H.M. Voigt, and H. Herzel. Properties of networks with chaotic neurons. In *Dynamical Networks*. Akademie-Verlag, 1989.
16. H. Herzel and J. Wendler. Evidence of chaos in phonatory signals. In *Proc. EUROSPEECH Genova*, 1991, pp. 263–266.

17. H. Herzel, I. Steinecke, W. Mende, and K. Wermke. Chaos and bifurcations during voiced speech. In *Complexity, Chaos and Biological Evolution*. Plenum Press, 1991, pp. 41–50.
18. H. Herzel, H. Seidel, and H. Warzel. Heart rate, respiration, and baroreflex: Entrainment, bifurcations, and chaos. *Wiss. Zeitschr. Humboldt Univ. Reihe Medizin*, 41, 51–57 (1992).
19. H. Warzel, H. Seidel, and H. Herzel. Heart rate, respiration, and baroreflex: Motivation and experiments. *Wiss. Zeitschr. Humboldt Univ. Reihe Medizin*, 41, 59–61 (1992).
20. I.R. Titze, R. Baken, and H. Herzel. Evidence of chaos in vocal fold vibration. In I. R. Titze, editor, *Vocal Fold Physiology: New Frontiers in Basic Science*. Singular Publishing Group, 1993, pp. 143–188.
21. I. Steinecke and H. Herzel. Bifurcations in an asymmetric vocal fold model. In E. Mosekilde, editor, *Computer Simulation in Biology, Ecology and Medicine*. Copenhagen, 1993, pp. 15–19.
22. H. Herzel, K. Krischer, D. Berry, and I. Titze. Analysis of spatio-temporal pattern by means of empirical orthogonal functions. In *Spatio-Temporal Patterns in Nonequilibrium Complex Systems*. Addison-Wesley, Santa Fe, 1995, pp. 505–518.
23. H. Seidel and H. Herzel. Modelling Heart Rate Variability due to Respiration and Baroreflex. In *Modelling the Dynamics of Biological Systems*. Springer, Berlin, 1995, pp. 205–229.
24. H. Herzel. Nonlinear dynamics of voiced speech. In *Nonlinear Dynamics: New Theoretical and Applied Results*. Akademie-Verlag, Berlin, 1995, pp. 256–274.
25. H. Herzel, W. Ebeling, I. Grosse, and A. O. Schmitt. Statistical Analysis of DNA Sequences. In *Bioinformatics: From Nucleic Acids and Proteins to Cell Metabolism*, VCH-Verlag, Weinheim, 1995, pp. 29–43.
26. H. Herzel, F. Argoul, and A. Arneodo. Type II intermittency in the presence of additive and multiplicative noise. In *Stochasticity and Quantum Chaos*. Kluwer, Dordrecht, 1995, pp. 99–113.
27. (a) H. Herzel. Nichtlineare Dynamik der Stimme, pp. 41–42.  
(b) R. Reuter, H. Herzel, M. Hess, and R. Orglmeister. Charakterisierung der rauhen Stimme durch Methoden aus der Nichtlinearen Dynamik, pp. 43–45.

- (c) H. Herzel. Modellierung von Asymmetrien der Stimmlippen, pp. 46-47.
- (d) M. Hess, M. Gross, and H. Herzel. Desynchronisierte Stimmlippenschwingungen, pp. 48-49.  
*Aktuelle phoniatriisch-pädaudiologische Aspekte*, RGV, Berlin 1995.
28. H. Herzel, W. Ebeling, A. O. Schmitt, and M. A. Jimenez-Montano, Entropies and Lexicographic Analysis of Biosequences. In *From Simplicity to Complexity in Chemistry and Beyond*, Eds. A. Müller, A. Dress, and F. Vögtle, Vieweg, Braunschweig, 1996, pp. 7-26.
  29. P. Mergell and H. Herzel. Bifurcations in 2-Mass Models of the Vocal Folds – the Role of the Vocal Tract. *Proceed. ETRW Speech Production Meeting*. Grenoble, 1996, pp. 189-192.
  30. P. Mergell and H. Herzel. Analyse von Stimmlippenschwingungen und biomechanische Modelle. *Fortschritte der Untersuchungsmethoden der menschlichen Stimme*, Erlangen, 1996, pp. 12-15.
  31. H. Herzel. Possible Mechanisms of Vocal Instabilities. *Proceed. Vocal Fold Physiology: Controlling Complexity & Chaos*, Singular Publ. Group, San Diego, 1996, pp. 63-75.
  32. H. Herzel and R. Reuter. Biphonation in Voice Signals. *Nonlinear, Chaotic, and Advanced Signal Processing Methods for Engineers and Scientists*, AIP Press, Woodbury, 1996, pp. 644-657.
  33. P. Mergell, H. Herzel, T. Wittenberg, M. Tigges and U. Eysholdt. Quantitative Laryngoscopy Combining High Speed Glottography and Non-linear Dynamics. *Proceed. Larynx 97*, Marseille, 1997, pp. 47-50.
  34. D. A. Berry, I. R. Titze, and H. Herzel. Normal Modes and Empirical Eigenfunctions: Tools for Interpreting Normal and Chaotic Vocal Fold Oscillations. *Advances in Quantitative Laryngoscopy*. Erlangen 1997, pp. 126-131.
  35. R. Reuter, R. Orgelmeister, H. Herzel, H. Nguyen, and O. Einfeldt. A Two-mass Model of the Vocal Folds Realized as Analog Electronic Circuit. *Advances in Quantitative Laryngoscopy*. Erlangen 1997, pp. 136-142.
  36. P. Mergell and H. Herzel: Observation and Modelling of Pitch-Formant Resonances. *Advances in Quantitative Laryngoscopy*. Erlangen 1997, pp. 119-125.

37. H. Herzel, J. Holzfuss, Z. Kowalik, B. Pompe, and R. Reuter. Detecting Bifurcations in Voice Signals. *Nonlinear Analysis of Physiological Data*. Springer, Berlin, 1998, pp. 325–344.
38. R. Reuter and H. Herzel. Quantifying Correlations in Pitch- and Amplitude Contours. *Advances in Quantitative Laryngoscopy, Voice and Speech Research*. Aachen, 1998, pp. 45–60.
39. T. G. Dewey and H. Herzel. Applications of Information Theory to Biology. *Pacific Symposium on Biocomputing 2000*, pp.597–598.
40. I. Große, S. V. Buldyrev, H. E. Stanley, D. Holste, and H. Herzel. Average Mutual Information of Coding and Noncoding DNA. *Pacific Symposium on Biocomputing 2000*, pp. 611–620.
41. S. Kielbasa, J. Korbelt, D. Beule, J. Schuchhardt, and H. Herzel. Finding Transcription Factor Binding Sites in Coregulated Genes by Exhaustive Sequence Search. *German Conference on Bioinformatics 2000*, pp. 55–62.
42. D. Beule, J. Schuchhardt, A. Malik, H. Eickhoff, H. Lehrach, and H. Herzel. Reliability of Microarray Data and Clustering. *German Conference on Bioinformatics 2000*, pp. 167–174.
43. J. Schuchhardt, L. Dong, U. Hofmueller, A. Kramer, J. Schneider-Mergener, and H. Herzel. Peptide Binding Landscapes. *German Conference on Bioinformatics 2000*, pp. 183–188.
44. C. Zemlin, H. Herzel, and A. Panfilov. Realistic Modeling of Cardiac Arrhythmia. *Nonlinear Dynamics in Life and Social Sciences*, IOS Press, Amsterdam, 2001, pp. 244–252.
45. N. Bluethgen and H. Herzel. MAP-Kinase-Cascade: Switch, Amplifier or Feedback Controller? *Computation of Biochemical Pathways and Genetic Networks*, Logos Verlag, Berlin, 2001, pp. 55–62.
46. C. Zemlin, H. Herzel, S. Y. Ho, F. R. C. Path and A. Panfilov. A Realistic and Efficient Model of Excitation Propagation in the Human Atria. *Computer Simulation and Experimental Assessment of Cardiac Electrophysiology*, Future Publ. Comp., Armonk, 2001, pp. 29–34.
47. R. Herwig, J. Schuchhardt, H. Eickhoff, H. Herzel, and H. Lehrach. Datenanalyse von Biochips: Von der Sequenz zum System. *Handbuch der Molekularen Medizin (Band 1). Molekulare und zellbiologische Grundlagen*, Springer Verlag, Berlin, 2003, pp. 360–387.

48. O. Weiss, A. Ziehe, H. Herzel. Optimizing property codes in protein data reveals structural characteristics. *ICAN/ICONIP, Lecture Notes in Computer Science 2714*, 2003, pp. 245–252.
49. M. Swat, A. Kel, S. M. Kielbasa, and H. Herzel. Modelling the G1/S transition in mammals – Bifurcation analysis of elementary modules. *Proceed. GCB'03*, belleville Verlag, München, 2003, pp. 147–152.
50. J. O. Korbelt, H. E. Assmus, S. M. Kielbasa, and H. Herzel. Compositional asymmetries and predicted origins of replication of the *Saccharomyces cerevisiae* genome. *Bioinformatics of Genome Regulation and Structure*, Kluwer, Boston, 2004, pp. 33–38.
51. H. Hatzikirou, W. T. Fitch, and H. Herzel. Voice Instabilities due to Source-tract Interactions. *Voice Physiology and Biomechanics - Modeling Complexity*, Marseille, 2004, pp.63–70.
52. I. Tokuda and H. Herzel. Detecting Synchronizations in an Asymmetric Vocal Fold Model from Time Series Data. *Voice Physiology and Biomechanics - Modeling Complexity*, Marseille, 2004, pp. 193–196.
53. S. M. Kielbasa, N. Bluethgen, and H. Herzel. Genome-wide analysis of functions regulated by sets of transcription factors. *Proceed. GCB'04, Lecture Notes in Informatics P-53*, 2004, pp. 105–113.
54. R. Zaccarelli, C. Elemans, W. T. Fitch, and H. Herzel. Two-mass model of the bird syrinx. *Proceed. 4th MAVEBA Workshop, Firenze University Press*, Firenze, 2005, pp. 47–50.
55. O. Raudies, R.-J. Kuban, L. Klein-Hitpass, O. I. Tchernitsa, C. Sers, H. Herzel, and R. Schaefer. Functional analysis and secondary expression profiling of candidate genes deregulated in conjunction with oncogenic Ras signaling. *Adv. Enzyme Reg.* 45, 2005, pp. 63–84.
56. G. Bordyugov, P. O. Westermark, A. Korencic, S. Bernard, and H. Herzel. Mathematical modeling in chronobiology. *Handbook Exp. Pharmacology* 217, 2013, pp. 335–357.
57. I. T. Tokuda, H. Herzel, D. Ono, S. Honma, and K. Honma. Oscillator network modeling of the suprachiasmatic nucleus in *Cry1/Cry2* double deficient mice. *Dynamics of Circadian Oscillation in the SCN*, Hokkaido, 2014, pp. 147–161.
58. G. Bordyugov and H. Herzel. The suprachiasmatic nucleus as a network of coupled oscillators: adaptation by learning. *Dynamics of Circadian Oscillation in the SCN*, Hokkaido, 2014, pp. 173–184.

59. B. Ananthasubramaniam and H. Herzel. Towards quantifying coupling in circadian tissues. *Circadian Clocks*, Hokkaido University Press, 2015, pp. 189–198.
60. R. Lehmann, H. Herzel, M. Brunner, G. Sancar, C. Sancar, and B. Ananthasubramaniam. Morning and evening peaking rhythmic genes are regulated by distinct transcription factors in *Neurospora crassa*. *Information- and Communication Theory in Molecular Biology*, Ed. M. Bossert, Springer, 2018, pp. 199–210.
61. A. E. Granada, H. Herzel, A. Kramer, and U. Abraham. Information transfer in the mammalian circadian clock. *Information- and Communication Theory in Molecular Biology*, Ed. M. Bossert, Springer, 2018, pp. 247–257.

## **Bücher**

W. Ebeling, H. Engel, H. Herzel: Selbstorganisation in der Zeit. Akademie-Verlag, Berlin 1990

A. Deutsch, L. Bruschi, H. Byrne, G. de Vries, and H. Herzel (Eds.). *Mathematical Modeling of Biological Systems, Volume I*. Birkhäuser, Boston 2007

## **Patente**

C. Albers, H. Herzel, K. Kricheldorf: Verfahren zur Steuerung des Spülprozesses in Haushaltswaschmaschinen (Nr. 214691)1984

C. Albers, H. Herzel, K. Kricheldorf: Meßzelle für elektrische Leitfähigkeitsmessungen (Nr. 218468)1985

D. Beule, J. Schuchhardt, H. Eickhoff, H. Herzel: Quantitative Messung von Molekülmengen in komplexen Gemischen (Anmeldung Nr.10025384.9)