

## ***Selected scientific papers***

### **A. Electromagnetic Systems**

1. J.-T. Eriksson, A. Arkkio, P. Berglund, J. Luomi, M. Savelainen, Liquid Metals and Superconductivity Launch a New Generation of Electric Machines, Proc. of the NATO APS Seminar on Liquid and Amorphous Metals, Zwiesel, 1979, p. 4.
2. P. J. Simola, J.-T. Eriksson, Conditioning of the MHD generator electrical output. Proc. of the 8th Int. Conf. on MHD Electrical Power Generation, Moscow, 1983, pp. 238-243.
3. J.-T. Eriksson, L. Kettunen, A. Pohjavirta, Direct propulsion of blue water vessels. IEEE Trans. on Magnetics, MAG-23, Nr 2, 1987, pp. 2584-2586. DOI: 10.1109/TMAG.1987.1065688
4. A. Koski, J.-T. Eriksson, Predicting the performance of a permanent magnet synchronous motor by analytical and numerical methods. IEEE Trans. on Magnetics, MAG-28, Nr 1, 1992, pp. 935-938. DOI: 10.1109/20.120032
5. L. Söderlund, J.-T. Eriksson, J. Salonen, H. Vihriälä, R. Perälä, A permanent magnet generator for wind power applications. IEEE Trans. on Magnetics, MAG- 32, Nr 4, 1996, pp. 2389-2392. DOI: 10.1109/20.511354
6. T. Vekara, J.-T. Eriksson, J.T. Tanttu, Dynamic model of an electromagnetic massive core brake actuator. IEEE Trans. on Magnetics, MAG 32, Nr 3, 1996, pp. 1970-1974. DOI: 10.1109/20.492896
7. L. Söderlund, A. Koski, H. Vihriälä, J.-T. Eriksson, R. Perälä, Design of an axial flux permanent magnet wind power generator. 8th International Conference on Electrical Machines and Drives, 1997, pp. 224-228. DOI: 10.1049/cp:19971072

### **B. Superconductivity, applications**

1. A. Arkkio, P. Berglund, J.-T. Eriksson, J. Luomi, M. Savelainen, A 50 kW homopolar motor with superconducting field windings, IEEE Trans. on Magnetics, MAG-17, Nr 1, 1981, pp.900-903. DOI: 10.1109/TMAG.1981.1061116
2. J.-T. Eriksson, *Superconducting homopolar machinery: Liquid metal current collection and design principles. Acta Polytechnica Scandinavica, El.Eng. Series Nr 48, 1982, p. 184.* (Main scientific contribution in this field, PhD-thesis.)
3. J.-T. Eriksson, J. Korpijärvi, Economic potential of applying HiTc superconductors to magnetic energy storage. IEEE Trans. on Magnetics, MAG-25, Nr 2, 1989, pp. 1807-1811. DOI: 10.1109/20.92653
4. J.-T. Eriksson, R. Mikkonen, Superconducting wiggler magnets. 2nd Nordic Symposium on Superconductivity, Röros 1991. Published in Superconducting Technology; 10 case studies, ed. K. Fossheim. World Scientific Publishing Co. pp. 175-184.
5. J.-T. Eriksson, L. Kettunen, R. Mikkonen, L. Söderlund, A high field superconducting wiggler for MAX-lab at Lund, Sweden. IEEE Transactions on Magnetics, Vol. 21, Nr 1, pp. 589-592. DOI: 10.1109/20.119945
6. J.-T. Eriksson, L. Kettunen, R. Mikkonen, L. Söderlund, H. Collan, K. Hjelt, Stability and training of a high field superconducting wiggler. IEEE Trans. on Applied Superconductivity, Vol. 3, Nr 1, 1993, pp. DOI: 10.1109/77.233829
7. J.-T. Eriksson, R. Mikkonen, J. Paasi, R. Perälä, L. Söderlund, A HTS synchronous motor at different operating temperatures. Applied Superconductivity Conference, Pittsburgh, 1996. DOI: 10.1109/77.614556

Eriksson, Jarl-Thure

### **C. Superconductivity, theory**

1. J. Paasi, J.-T. Eriksson, Intergrain flux creep in high-T<sub>c</sub> superconductors. Physical Review B, Vol. 48, Nr 13, 1993. pp. 9873-9876. DOI: <https://doi.org/10.1103/PhysRevB.48.9873>
2. J. Paasi, M. Lahtinen, J.-T. Eriksson, M. Polak, Experimental study of the intergranular magnetization of (Bi,Pb)<sub>2</sub>Sr<sub>2</sub>Ca<sub>2</sub>Cu<sub>3</sub>O<sub>10+x</sub> superconductors Physica C, Vol. 259, Iss 1-2, March 1996, pp. 1-9. DOI: [https://doi.org/10.1016/0921-4534\(96\)00041-X](https://doi.org/10.1016/0921-4534(96)00041-X)
3. J. Paasi, A. Tuohimaa, J.-T. Eriksson, Simulation of the intergranular magnetization of (Bi,Pb)-Sr-Ca-Cu-O superconductors by using Josephson junction arrays. Physica C 259, 1996, pp.10-26. DOI: [https://doi.org/10.1016/0921-4534\(96\)00040-8](https://doi.org/10.1016/0921-4534(96)00040-8)

### **D. Neural networks, Complexity**

1. J. Perttula, T. Tarhasaari, J.-T. Eriksson, Order versus disorder - philosophical implications on computability and modelling of complex systems. Proc. of the 1993 International Symposium on non-linear theory and its applicatoins (NOLTA), Hawaii, 1993, pp. 799-802.
2. Li Lin, J.-T. Eriksson, A neuro-fuzzy controller and learning algorithm for wind turbines. Proc. of ICSPAT, Boston, 1995, pp. 1173-1177.
3. J.-T. Eriksson, Impact of information compression on intellectual activities in the brain. Int. Journal of Neural Systems, Vol. 7, Nr 4, 1996. pp. 543-550. DOI: <https://doi.org/10.1142/S0129065796000531>
4. S. Mäkinen, K. Hartikainen, J.-T. Eriksson, V. Jäntti, Spontaneous and evoked cortical dynamics during deep anaesthesia. Int. Journal of Neural Systems, Vol. 7, Nr 4, 1996. pp. 481-487. DOI: <https://doi.org/10.1142/S0129065796000464>
5. Li Lin, J.-T. Eriksson, Non-linear time series prediction using an optimum neural network architecture. Proc. of the Int. Conference on Neural Information Processing, Hong Kong 1996, pp. 737-741.
6. M. Tenhunen-Eskelinen, J.T. Kuikka, E. Länsimies, J.-T. Eriksson. Fractal analysis of blood flow distribution in human lungs. Med Biol Eng Computing 34: Suppl 1: 257-258, 1996.
7. S. Mäkinen, J.-T. Eriksson, Forecasting the mobile phone penetration in Finland. The 20<sup>th</sup> Int. Symposium on Forecasting, Lisbon Portugal, June 21-24, 2000.
8. J.-T. Eriksson, Chaos Theory and the Manageability of Complex Systems. Book chapter 7 in How Do We Explore Our Futures? Methods of Futures Research. 1st ed. in English, Finnish Society for Futures Studies. Suomen Uusiokuori Oy, Somero, 2017

### **E. Cosmology**

1. J.-T. Eriksson, A modified model of the universe shows how acceleration changes galaxy dynamics. International Journal of Physics, Vol. 6, No. 2, pp. 38-46, 2018. DOI: 10.12691/ijp-6-2-3. <http://pubs.sciepub.com/ijp/6/2/3>
2. J.-T. Eriksson, The momentum of new matter replaces dark energy and explains the expansion of the universe. International Journal of Physics, Vol. 6, No 5, pp. 161-165, 2018. doi: 10.12691/ijp-6-5-4. <http://pubs.sciepub.com/ijp/6/5/4>

Eriksson, Jarl-Thure

3. J.-T. Eriksson, A combined cosmological and gravitational redshift supports electron-positron annihilation as the most likely energy source of the CMB. International Journal of Physics, vol. 7, no. 1, pp. 16-20. DOI: 10.12691/ijp-7-1-3. <http://pubs.sciepub.com/ijp/7/1/3>
4. J.-T. Eriksson, The Universe as a quantum leap, the Schrödinger equation links quantum mechanics to general relativity. International Journal of Physics, vol. 8, no. 2, pp. 64-70. DOI:10.12691/ijp-8-2-4. <http://pubs.sciepub.com/ijp/8/2/4>
5. J.-T. Eriksson, Quantum Fluctuations and Variable G Return Einstein's Field Equation to Its Original Formulation. International Journal of Physics, 2021, Vol. 9, No 3, 169-177, DOI:10.12691/ijp-9-3-4. <http://pubs.sciepub.com/ijp/9/3/4>
6. J.-T. Eriksson, On the Origin of the CMB Radiation. International Journal of Physics, 2021, Vol. 9, No 5, 240-244. DOI:10.12691/ijp-9-5-3. <http://pubs.sciepub.com/ijp/9/5/3>
7. J.-T. Eriksson, Black Holes as the Source of All Matter and Radiation in the Universe. International Journal of Physics. 2022, Vol. 10, NO. 3, 144-153. DOI:10.12691/ijp-10-3-3