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EINLADUNG

zum Vortrag von Herrn

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über

"The Role of Thermodynamics in Dynamic Ordering"

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Role of Thermodynamics in Dynamic Ordering

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Extended Abstract

Creation and existence of self-organisation or dynamic order has puzzled even pioneering scientists, because it "*appears*" to work against the *Entropy Principle* (EP). Known thermodynamic principles were conceptually analysed for deducing nine statements based on the broken symmetry stated by EP and the Law of Maximum Entropy Production [1]. They serve as scale-invariant guiding principles determining creation, existence, and destruction of dynamic ordering.

Negentropy is re-defined, based on which, scale-invariant physical principles for dynamic order existence (Negentropy Principle) and evolution (Principle of Maximum Negentropy Principle: PMNEP) in chaos were identified [2]. A universal model for dynamic ordering based on mass / energy exchange with the surroundings is introduced, which physically explains the concept of '*negentropy debt*' introduced by Schroedinger. The PMNEP encompasses the basic concepts in the evolution postulates by Darwin and de Vries. Perspectives of dynamic order evolution in literature point to the validity of PMNEP as the law of evolution. Thermodynamic basis is provided for the co-existence of superior and inferior forms of dynamic order in chaos.

References

[1] **Mahulikar, S.P.**, & Herwig, H., 2004 (Oct), Conceptual investigation of the entropy principle for identification of directives for creation, existence and total destruction of order, *Physica Scripta*, Vol. 70, No. 4, pp. 212-221.

[2] **Mahulikar, S.P.**, & Herwig, H., 2009, Exact thermodynamic principles for dynamic order existence and evolution in chaos, *Chaos, Solitons & Fractals*, doi: 10.1016/j.chaos.2008.07.051, in press.