

ON A PRINCIPLE OF MINIMUM ENTROPIC GRADIENT-BASED INTERACTION

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ABSTRACT

In the context in which the second law of Thermodynamics is considered challengeable (see, for example, the constructal law that aspires to a most fundamental place than the mentioned law), the paper, after a critical examination of the two principles, proposes a third solution, namely the principle (or law) of the minimum entropic gradient-based interaction, which implies neither the second law of Thermodynamics nor the constructal law, although it seems to integrate both (such integration could feed, in turn, the proposal's aspiration to be... the most fundamental principle/law which guides our world functioning – from micro-particles to macro-galaxies. To this end, the principle is formulated and described in its logical body, then its functioning is examined for some relevant existence fields – of nature, of biological life, and of social/cultural sphere. The next part of the study is dedicated to putting face to face the three (claimed) explanations – the second law of Thermodynamics, the constructal law, and the minimum entropic gradient-based interaction, in order to get a possible order of generality among them. Finally, the paper provides some possible logical as well as empirical tests aimed at falsifying both the coherence and the correspondence-truth that, as I believe, are the necessary predicates, in fact, of the proposal. Some doubts regarding the alleged fundamental place claimed by the proposal are enunciated as well.

Keywords: entropy law, constructal law, minimum entropic gradient, interaction