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Inter-subjective relationship of higher-order among spatial-temporal wavy environmental factors – a methodological trial based on a standpoint of “Relationism-First”

APPENDIX V

EXPRESSION OF THE HIERARCHICAL PROPERTY IN THE RELATIONSHIP CONFIGURATION OF INTER-SUBJECTIVITY

In the probability distribution form with both positive and negative fluctuation variables, the parameters of the distribution form are given by μ_y , σ_y and A_{mn} . Then, the Gaussian distribution of the first term in the orthonormal expansion type probability expression is reflected by only μ_y and σ_y . It is rational that the mean and σ_y (around mean) are reflected in the base of the expression since they are originally the fundamental information as the supporting basis (like the substructure) for the real substantial existence of the fluctuation.

In the subsequent parameters A_{mn} ($m \neq 0$, $n \neq 0$) reflecting the mutual intermediation hierarchically, once after the statistical information as the base of the substantial fluctuation existence is first reflected, only the form of the existence mode (each fluctuation style of the correlation between different type fields) constructed upon its substantial base is reflected (in the form of functional style connected to the lower and upper structure of the correlation). Therefore, especially, it is rational that we dare employ such mutual correlation expression of every hierarchical type reasonably in the form of a non-dimensional quantity (internally reflecting its substance basis). Hereupon, A_{mn} for $m=0$ or $n=0$ does not reflect the quantity on the mutual intermediation but reflect the higher order statistical moments on each individual variable (in the higher order style form of the fluctuation pattern on only each variable like the coefficient of well known skewness and kurtosis).

At the end, it seems to deserve special emphasis as a basic principle that every possible types of actual observation served for any analyses based on an idea: “Relationism-First” have to be realized on the substantial basis at the same time and in the same ring for all mutually correlated environmental factors without adding any human artificial operation to the best of our ability (if possible).