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Abstracts of Short Communications and Posters

Section:

11. Mathematical Physics

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Universal Singularity Decomposition

Can *singularity information needs* be satisfied (structure discovered, resp. preserved) and to what extent?. .. In general singularities are found *decomposable*, and to arbitrary degree, even given structure conditions and constraints (for example, dimension, symmetry).
Intuitively one "turns around" the singularity (example: vertex (point) singularities acquire *facets*, while *outer-dimensionality* is preserved). Formally, from the category of abstract sets to topological, geometrical, finally physical constructions and applications, we use the *endomorphisms*.
Results: (1) *Decomposable singularities preserve information* (up to precisely *almost-any*) by *singularity endomorphisms* encoding;
(2) Any *nonlinear or nonstandard* mathematical structure in any category can be *precisely structured* (examples: nonstandard arithmetic, analysis, etc; nonlinear analysis, physics; non-Pythagorean geometries);
(3) the physical realisation is interpreted as *pure energy states* in their carrying space(s) (realising a *pre-physical model T. O. E.*); this includes precise *cosmological initial (singularity) conditions.*