

27th IAA SYMPOSIUM ON SPACE AND SOCIETY (E5)
Contemporary Arts Practice and Outer Space: A Multi-Disciplinary Approach (3)

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SPACE MATTER

Abstract

”An abstract machine in itself is not physical or corporeal, any more than it is semiotic; it is diagrammatic (it knows nothing of the distinctions between the artificial and the natural either). It operates by matter, not by substance; by function, not by form. . . . The abstract machine is pure Matter-Function — a diagram independent of the forms and substances, expressions and contents it will distribute. (A Thousand Plateaus: Capitalism and Schizophrenia, 2004,156)”

For Deleuze, the problem-solving activity in which diagrams (as autopoietic machines) are engaged is instantiated even in simple material-energetic systems. For example, an aggregate of physical entities ruled by basic energy constraints may display an organized collective behavior which constructs its own logic: it will adopt a form that requires the least energy. Emergent structures shaping matter. Inversely, physical systems can serve to compute valleys of energy, an endogenous topological form of molecular assemblages.

The campaign of low gravity experiments on transparent model alloy succinonitrile – 0.24 wtThe original images were brought back from the ISS and processed with custom-made software to analyze geometric evolutionary patterns, finding recourse with the Voronoi construct . Voronoi spatial classification logic was used as a tool to understand the structures, revealing itself an intrinsic mode of self organization in the structures themselves. Centroid analysis of cells and pixel shading are used to create a series of 3-Dprinted sculptures materializing the different expressive stages of the evolutionary material process.

Computed speculation of the underlying laws of material order calculates the imagined shape and distances between microstructural entities’ system-induced competition. Material properties applied over the 3-D printed models let us construct and explore minimal surfaces and energy paths between cells. The result is a sort of “negative” of the original 3-D sculptures which represents not only the simplest path between centroids, but also their minimal energy path itself.

The resulting sculptures capture the intricacy of these forces expressed as form, becoming thus a “pure matter-function diagram”.