



UNIVERSE - 2012 - hwx cm 70x150
Fractal geometry on photo background
Digital print on nautical flag

Do you think you could rule the universe
and improve it?

Daode jing, 29 (China, VI-IV century B.C.)

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Fractionary Geometry

Fractionary geometry or fractal geometry (a term used for the first time in 1975 by the mathematician Mandelbrot) is mainly used to study the behaviour of complex natural phenomena, thus cannot be reduced to the classical geometrical entities such as points, lines, squares, cubes or spheres. These are for example the distribution of galaxies, the shape of coastlines, the dynamics of earthquakes, the shape and distribution of clouds, snow slides, the branched structure of trees, the movement of water. Fractal objects are characterized by self-similarity or scale invariance: characteristics remain the same from scale to scale. Let's take a cauliflower as an example: it can be reduced in many little bits which still maintain the structure of the whole vegetable. Every attempt to reduce a fractal in some smaller parts brings up the same basic elements, containing the same structure and so on.

Fractals, due to their irregular nature, have a fractionary dimensions. In order to generate a fractal, it is necessary to repeat a certain procedure forever, that means that a fractal is the result of a dynamic system. The complexity of calculations was an obstacle for a significant development for this kind of geometry until the introduction of calculators in the 60s. Nowadays, dedicated software versions are able to quickly calculate the iterations and view the result.

Fractal geometry has become an art instrument, through the combination of shape complexity and colour choice. The artist works on iterations and enlargements and reductions in a subjective and totally flexible way so as to express his or her creativity.