SELF-ORGANIZATION OF THE MATTER BY FRACTALS LAWS (COMPUTER FILM)

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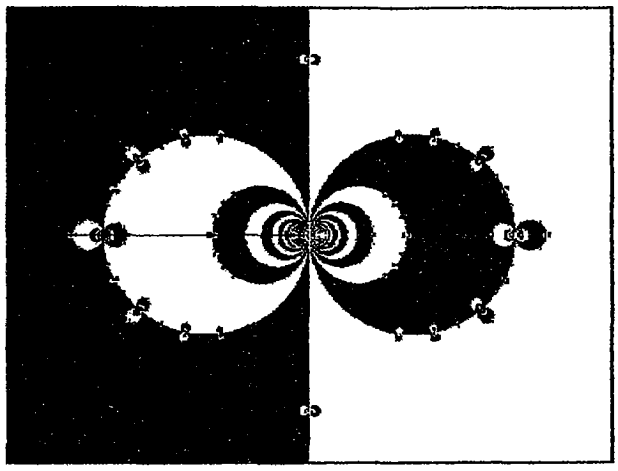
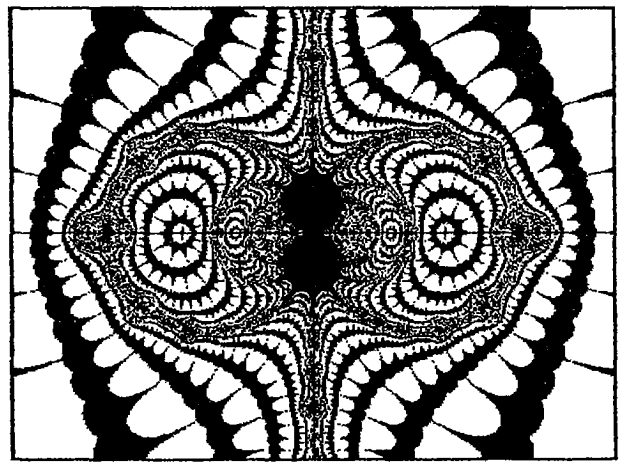
For the exposure possible ways for reconstructions the systems with non-linear character of interactions there tiles it was made the following computer experiment. Let us put one-dimensional lattice on real axis of complex plane. The coordinates of the nets of this lattice mat be present as the value of the roots of the arbitrary equation automorphism's group of which is coincide with automorphism's group of the lattice. In connection with the Newton methods each point of complex plane is attracting to the one of the roots of this equation (i.e. to the concret net of this one-dimensional lattice) and trajectoty ot this attraction is define identically for example by the following equation:



$$Z_{n+1} = \sin^2 Z_n$$

Let us paint the points of the complex plane (in the given case the pixels of the screen) by the colours of thet nets, to which they come during the Newton iteration process. Evident scaling of the picture pointed out to the fractal character of the proceea. The points of the bright colour are correspond to the rigions in which the bihevior of the points are non-predictible.



Let us describe yet ε-neighborhood around the point in which the denominators of the iteration equations turn into the zero and write to each of point of the complex plane from this neibourhood the white colour. Figure 2 demonstrate liding influence this neighbourhood on the all system.

This picture have and ecologica interpretation. Such way is reconstractin the surrounding by infuence of the prohibitions laws. The fractal theory of the human society is coming.

Dokl.Russ.Acad.Sc., 1995, b.341, N 5, p.610-613
Science and Life, 1995, N 8.