

The fractals and the Nature

Let's say $1 + 1 = 2$, O.K. Then we could add next numbers. We have got an arithmetic. But alas, in our world there are not two objects equal to each other. Every object, entity, feeling, colour etc. is different from each other. Imagine the snowflake – through history of our world never drop two identical snowflakes. How many could there were of such objects?

Could we pretend vacuum oscillations as a base of our universe. Every vacuum fluctuation is different from each other. Am I impertinent to talk about this? Imagine the number line. How deeply we are going through the number line, the line is always the same. Between two rational numbers as close to be there are infinity next rational numbers there. Yes the number line looks as fractals in every position. The number line is self-similar. The ideal line can't exist in the real world.

It is a question how to find a pot in the fractal forms (or anything else as an orange, a glass ball etc.). If we go close we see fractal forms. The same is with the best glass ball. The surface of the ball is nearly „ideal“. But if we have a look to close, we could see a lot of fractal forms. In the other hand if we go to the higher forms, we could see fractal forms either. No pots or glass balls.

It is a big difference between pure fractal chaos (**the mathematical fractals**) and the bounded fractal chaos (**the natural fractals**) as the pot or the meter etc. In pure fractal forms we don't see any familiar object (a pot, a glass, a flower etc.) The pure fractal (the mathematical fractals) are allways self-similar. The richness of variable forms (trees, fruits, animals, people, feelings, colours etc) are in the natural fractals which are not pure self-similar. These fractals we could only solve by using of the probability with a help of the mathematical fractals theory. The shapes of the natural fractals depend on the point of view – from near or from far away. From our eyes 100m above we don't recognize the pot from the glass. And with using the microscope (1000x or more) we don't recognize the pot from the glass either. For the reason of silicate' structures.

But these „ideal“ forms are discrete with some probability through the species. Pears in spite of apples, dogs in spite of cats, etc. See Fig.1.

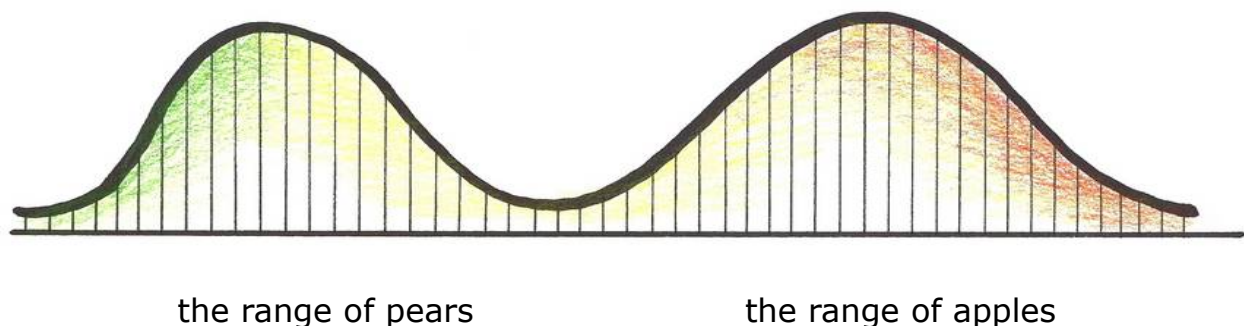


Fig. 1 – the probabilistic areas of apples and pears

Imagine if we had no discrete species in biology. The probabilistic distribution is the line (see Fig.1). Pears could step by step change to apples and dogs to cats. After that we are not able to recognize one specie from another one. The ideal shapes of dogs and cats etc. are only our interpolation of the real world.

There is a pure chaos everywhere. If we go close in any part of our universe then we see the same chaotic structures (randomness, fractals). But in the middle there are some formatted structures (shapes), forms with many motions. There is also a genesis with such complicated structures – atoms, molecules, minerals, cells, flowers, animals, people.

These structures are trembling by the fluctuations around them. See Brown motion in biology.

All what we see in the Nature are forms. Imagine these forms as the amplified modulating of ELMG waves in the radio communication. In our case there are modulated vacuum fluctuation by the different forms. Dogs, cats, oranges, , etc. - to keep them in their forms.

Anyway, go on in our case of the Probability areas of structures. Where is the exact line between the apple and the air. There is only the probabilistic area.

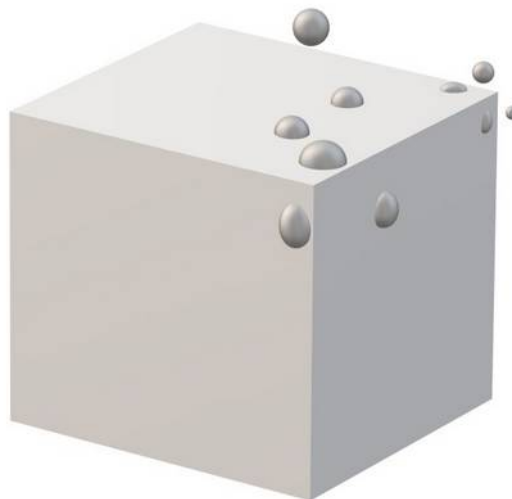


Fig. 2 – the cubic atom of the iron (Fe) with atoms around the surface

As we see from the fig. 2. Where is the shape of the cube from the iron? There are only trembling atoms bounded in the structure of the Fe-cube. If we look close to the surface then we could see some atoms evaporate inspite of the room temperature. Around the surface there is a thin area where is so difficult to estimated where is the end of the Fe crystal. The end of Fe-crystal is hidden in the probability area.

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