Notes on Multipolarity

There is a lot of talk now about a multipolar world. It is a good modern term in politics. I would like to remind you that this term has long been used in physics. You can become familiar with the theory of multipolarity by reading the book "Fundamentals of Multipolarity", authors Lensky V.V. and Kochnev A.G., published in 1986.

Let us briefly consider the relationship of the two polarities in electricity. Two opposite charges A and B, as we know, attract. With close interaction, opposite charges compensate each other, that is, $A + B = 0$. The essence of bipolar relations is that the zero level of energy, the level of rest, is, so to speak, divided into two opposites. Each of them has a certain level of charge and has some energy. When two opposites combine, they are mutually destroyed, releasing energy. Note that the attraction of two opposites occurs along the line, to the point between them.

The book by Lensky and Kochnev shows several options for creating multipolar systems. Tripolarity can be built from bipolarities A and B. Relatively speaking, two structures AA-BB-AB and BB-AA-BA will attract each other. Obviously, such structures of three components are located in a plane. The attraction of two tripolar structures is possible when they are located in the same plane, but their vertices must be diametrically opposed. The diagram resembles a six-pointed star. Element AA must be opposite element BB, respectively, element BB must be opposite AA, element AB must be opposite BA. Let me remind you that all this works on the basis of ordinary electric charges A and B.

Let us note that the attraction of two tripolarities occurs towards the center. This is an in-plane compressive deformation.

It is more difficult to describe the structure of quadripolar tetrahedral structures, since this requires spatial thinking. Imagine a tetrahedron with four different elements at its vertices. The two quadripolar complexes will attract each other if positioned correctly. In space, such complexes look like two tetrahedrons with a common center; the vertices of the two tetrahedrons are diametrically opposite. Note that the two tetrahedral will tend to shrink towards the center so that their elements at the four vertices can cancel each other out. This is volumetric compression.

For electricity, $A + B = 0$. More complex structures are built on the basis of three or more equal elements, which are mutually balanced when fused. For example, these are elements X Y Z. Here $X + Y + Z = 0$. These structures are not electrical elements.

I hope the reader now has an interest in studying multipolarity. The practical application of multipolar technologies relates to bioenergy, gravity and other interesting areas of science and technology.

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