

FROM THE UNITY OF THE ELEMENTS OF NATURE IN EMPEDOCLES TO A UNIFIED THEORY OF EVERYTHING IN MODERN PHYSICS

Empedocles not only considered the existence of the four ‘classical’ elements as the cause of the beginning of the world, but he also supported the view of their unification, which results in the creation of the imaginary world of the Sphere. According to Empedocles, the Universe existed in the situation of the Sphere before the explicit presence of the four elements and was the cause for the creation of everything. Moreover, the nature of the Sphere is considered as superior, compared to the four elements. Nowadays, researchers in Particle Physics construct accelerators that not only can perform collisions of particles at high energies, but they also contribute in the discovery of new particles. All this research has resulted in the formulation of Grand Unified Theories, through which the whole Universe can be described. Physicists believe that initially the four forces in nature were unified and activated due to the existence of a disorder, thus creating our Universe.

The theory of Empedocles on the fundamental elements of nature and their origin has been examined here, as well as the modern view on the elementary-particle world along with its fundamental interactions, whose unification would contribute to the formulation of the ‘Theory of Everything’. The common points of the modern theories with the theory of Empedocles have been summarized, and it has been concluded that both the philosophy of Empedocles and modern scientific research seek to uncover and explore the underlying unity of the natural world, which is not perceivable by the human senses.