

The aim of this work is to theoretically study and describe some of the models of living systems. In the first part, we focus on models of autonomous systems, such as the cell or a living being as a whole. In this part, we introduce the principle of autopoiesis and a mathematical model of an autopoietic system. We also analyse other related and philosophically relevant terms and principles. In the second part, we describe in detail and compare two dynamic models of brain. Both parts take the so-called enactive approach, and use the terms and principles of the dynamic systems theory. As a part of this work, a model of one of the key terms - sensorimotor skills - has been created using neural networks.