

Opuscula officinara. Trabalhos de História e Filosofia
das Ciências do Instituto Rocha Cabral

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O conceito de energia

passado e sentido

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The Concept of Energy: History and Meaning

Abstract

The American physicist and Nobel Prize winner Richard Feynman said, "It is important to realize that in physics today we have no knowledge of what energy is". In Bergmann and Schaefer's *Experimental Physics*, 1998, one reads, nobody knows what energy really is. Other physicists are saying the same. This is the field where the question, which the present book deals with, comes from: what is energy or, more precisely, how can we conceive it.

The method of dealing with the question consists of analysing the principle of the conservation of energy in its origin and development. In the first chapter of the book, the texts of Mayer, Joule, Colding and Helmholtz, published between 1842 and 1851, are studied. This is done in two steps: in the first one a hermeneutical analysis is carried out and in the following one what is useful for the question, what is energy, is dealt with.

The works which were important for the development of the conception (1851-1908) are dealt with in the second chapter using the same methodology. In this chapter, textbooks on Mechanics or Thermodynamics of the twentieth and twenty-first century are also considered.

In the third and last chapter, a synopsis of the results of the research is given. The study shows that the discoverers did not find anything which can either be created or destroyed, but instead a method of dealing with phenomena. Towards the end of the nineteenth century, a hypostasising process of energy took place. This explains the difficulty of physicists in finding experimentally that extraordinary something we call energy.