Foundations of Physics

An International Journal Devoted to the Conceptual Bases and Fundamental Theories of Modern Physics

Editor-in-Chief: C. Rovelli

► The leading journal for controversial issues concerning the foundations of modern physics
► Covers all topics in physical sciences, including quantum mechanics, special and general relativity, cosmology and string theory
► Dedicated Editorial Board headed by Carlo Rovelli
► 92% of authors who answered a survey reported that they would definitely or probably publish in the journal again

The conceptual foundations of physics have been under constant revision from the outset, and remain so today. Discussion of foundational issues has always been a major source of progress in science, on a par with empirical knowledge and mathematics. Examples include the debates on the nature of space and time involving Newton and later Einstein; on the nature of heat and of energy; on irreversibility and probability due to Boltzmann; on the nature of matter and measurement during the early days of quantum theory; on the meaning of renormalization, and many others.

Today, insightful reflection on the conceptual structure utilized in our efforts to understand the physical world is of particular value, given the serious unsolved problems that are likely to demand, once again, modifications of the grammar of our scientific description of the physical world. The quantum properties of gravity, the nature of measurement in quantum mechanics, the primary source of irreversibility, the role of information in physics – all these are examples of questions about which science is still confused and whose solution may well demand more than skilled mathematics and new experiments.

Foundations of Physics is a privileged forum for discussing such foundational issues, open to physicists, cosmologists, philosophers and mathematicians. It is devoted to the conceptual bases of the fundamental theories of physics and cosmology, to their logical, methodological, and philosophical premises.

The journal welcomes papers on issues such as the foundations of special and general relativity, quantum theory, classical and quantum field theory, quantum gravity, unified theories, thermodynamics, statistical mechanics, cosmology, and similar.

Impact Factor: 1.067 (2016), Journal Citation Reports®

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