The Origin of Gravity From First Principles

Editor: Volodymyr Krasnoholovets, PhD.

Department of Theoretical Physics, Institute of Physics, Kyiv, Ukraine

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Book Description: This book presents a collection of chapters in which researchers who have worked in the field of gravity for years reveal their visions of the origin of gravity. Some approaches are based on field equations and ideas of general relativity, but others suggest their own procedures. Among the visions we see the further development of principles of general relativity, which unify gravity with fluctuations of matter or a background of super-strong interacting gravitons, as well as visions that ignore complicated interactions of gravity with other fields altogether. There is also a new approach in which space-particle dualism is presented. In addition, there is the approach that suggests starting directly with the smallest granularity of space, defined by the Planck scale. These lines of study involve constructions and methods emerging from quantum mechanical formalism and even suggestions for new courses of action, such as subquantum kinetics and submicroscopic mechanics. These approaches all try to explain the concepts of particle, mass, and their interactions. These are new trends both in the theory of gravitation and in the theory of elementary particles, and hence fundamental physics in general.

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