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Nota di contenuto	Part I. The recent debate on scientific realism -- Part II. Causal realism -- Part III. The quantum challenge.
Sommario/riassunto	Particle physics studies highly complex processes which cannot be directly observed. Scientific realism claims that we are nevertheless warranted in believing that these processes really occur and that the objects involved in them really exist. This book defends a version of scientific realism, called causal realism, in the context of particle physics. The first part of the book introduces the central theses and arguments in the recent philosophical debate on scientific realism and discusses entity realism, which is the most important precursor of causal realism. It also argues against the view that the very debate on scientific realism is not worth pursuing at all. In the second part, causal realism is developed and the key distinction between two kinds of warrant for scientific claims is clarified. This distinction proves its usefulness in a case study analyzing the discovery of the neutrino. It is also shown to be effective against an influential kind of pessimism, according to which even our best present theories are likely to be replaced some day by radically distinct alternatives. The final part

discusses some specific challenges posed to realism by quantum physics, such as non-locality, delayed choice and the absence of particles in relativistic quantum theories.