Symmetries in physics: philosophical reflections

Brading, Katherine A. and Castellani, Elena (2002) Symmetries in physics: philosophical reflections.

This is the latest version of this eprint.

Full text available as:
PDF - Requires a viewer, such as Adobe Acrobat Reader or other PDF viewer.

Abstract

This is the table of contents and first chapter of "Symmetries in physics: philosophical reflections", edited by Katherine Brading and Elena Castellani, Cambridge University Press, 2003. As the organisers of the philosophy of physics workshop on symmetries held in Oxford in January 2001, we decided to bring together in one book the current philosophical discussions of symmetry in physics.
Symmetry considerations dominate modern fundamental physics, both in quantum theory and in relativity. Philosophers are now beginning to devote increasing attention to such issues as the significance of gauge symmetry, the role of symmetry-breaking, the empirical status of symmetry principles, and so forth. These issues relate directly to
traditional problems in the philosophy of science, including the status of the laws of nature, the relationships between mathematics, physical theory, and the world, and the extent to which mathematics dictates physics.

Keywords:	symmetry, symmetry breaking, gauges, Noether's theorems, general covariance, permutation symmetry, parity, Leibniz's principles, objectivity, structure
Subjects:	Specific Sciences: Physics: Classical Physics Specific Sciences: Physics: Fields and Particles Specific Sciences: Physics Specific Sciences: Physics: Quantum Field Theory Specific Sciences: Physics: Quantum Mechanics Specific Sciences: Physics: Relativity Theory
Conferences and Volumes:	[2001] Symmetries in Physics, New Reflections: Oxford Workshop (Oxford, January 2001)
ID Code:	926
Deposited By:	Castellani, Elena
Deposited On:	08 December 2002

Available Versions of this Item

- Symmetries in physics: philosophical reflections (deposited 08 December 2002) **[Currently Displayed]**