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Autore	Fabjan Christian W
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Soggetti	Particle acceleration Physical measurements Measurement Elementary particles (Physics) Quantum field theory Nuclear physics Heavy ions Nuclear energy Particle Acceleration and Detection, Beam Physics Measurement Science and Instrumentation Elementary Particles, Quantum Field Theory Nuclear Physics, Heavy Ions, Hadrons Nuclear Energy
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Nota di contenuto	Chapter 1. Introduction -- Chapter 2. The Interaction of Radiation with Matter -- Chapter 3. Scintillation Detectors for Charged Particles and Photons -- Chapter 4. Gaseous Detectors -- Chapter 5. Solid State Detectors -- Chapter 6. Calorimetry -- Chapter 7. Particle Identification: Time-of-Flight, Cherenkov and Transition Radiation Detectors -- Chapter 8. Neutrino Detectors -- Chapter 9. Nuclear Emulsions -- Chapter 10. Signal Processing for Particle Detectors --

Chapter 11. Detector Simulation -- Chapter 12. Triggering and High-Level Data Selection -- Chapter 13. Pattern Recognition and Reconstruction -- Chapter 14. Distributed Computing -- Chapter 15. Statistical Issues in Particle Physics -- Chapter 16. Integration of Detectors Into a Large Experiment: Examples From ATLAS and CMS -- Chapter 17. Neutrino Detectors under Water and Ice -- Chapter 18. Space Borne Experiments -- Chapter 19. Cryogenic Detectors -- Chapter 20. Detectors in Medicine and Biology -- Chapter 21. Solid State Detectors for High Radiation Environments -- Chapter 22. Future Developments of Detectors.

Sommario/riassunto

This second open access volume of the handbook series deals with detectors, large experimental facilities and data handling, both for accelerator and non-accelerator based experiments. It also covers applications in medicine and life sciences. A joint CERN-Springer initiative, the “Particle Physics Reference Library” provides revised and updated contributions based on previously published material in the well-known Landolt-Boernstein series on particle physics, accelerators and detectors (volumes 21A,B1,B2,C), which took stock of the field approximately one decade ago. Central to this new initiative is publication under full open access.
