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Collana	Particle Acceleration and Detection
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Altri autori (Persone)	StrandlieAre
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Sommario/riassunto	This open access book is a comprehensive review of the methods and algorithms that are used in the reconstruction of events recorded by past, running and planned experiments at particle accelerators such as the LHC, SuperKEKB and FAIR. The main topics are pattern recognition for track and vertex finding, solving the equations of motion by analytical or numerical methods, treatment of material effects such as multiple Coulomb scattering and energy loss, and the estimation of track and vertex parameters by statistical algorithms. The material covers both established methods and recent developments in these fields and illustrates them by outlining exemplary solutions developed by selected experiments. The clear presentation enables readers to easily implement the material in a high-level programming language. It also highlights software solutions that are in the public domain whenever possible. It is a valuable resource for PhD students and researchers working on online or offline reconstruction for their experiments.

