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| Titolo                  | Laser-Driven Sources of High Energy Particles and Radiation : Lecture Notes of the "Capri" Advanced Summer School // edited by Leonida Antonio Gizzi, Ralph Assmann, Petra Koester, Antonio Giulietti                                                                                                                                                                                                                                                                      |
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| Soggetti                | Atoms<br>Molecules<br>Particle accelerators<br>Medical physics<br>Plasma (ionized gases)<br>Gravitation<br>Atoms and molecules in external fields<br>Accelerator Physics<br>Medical Physics<br>Plasma Physics<br>Classical and Quantum Gravity                                                                                                                                                                                                                             |
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| Nota di contenuto       | Preface -- "Basics of Laser-Plasma Interaction: a Selection of Topics" -- "LWFA electrons: staged acceleration" -- "Fundamentals and Applications of Hybrid LWFA-PWFA" -- "Introduction to High Brightness Electron Beam Dynamics" -- "Ion acceleration: TNSA and beyond" -- "Ultrafast Plasma Imaging" -- "Simulation of particles through matter" -- "Lectures about intense lasers: amplification process" -- "Diagnostics of ultrafast and ultraintense laser pulses". |
| Sommario/riassunto      | This volume presents a selection of articles based on inspiring lectures held at the "Capri" Advanced Summer School, an original event                                                                                                                                                                                                                                                                                                                                     |

conceived and promoted by Leonida Antonio Gizzi and Ralph Assmann that focuses on novel schemes for plasma-based particle acceleration and radiation sources, and which brings together researchers from the conventional accelerator community and from the high-intensity laser-matter interaction research fields. Training in these fields is highly relevant for ultra-intense lasers and applications, which have enjoyed dramatic growth following the development of major European infrastructures like the Extreme Light Infrastructure (ELI) and the EuPRAXIA project. The articles preserve the tutorial character of the lectures and reflect the latest advances in their respective fields. The volume is mainly intended for PhD students and young researchers getting started in this area, but also for scientists from other fields who are interested in the latest developments. The content will also appeal to radiobiologists and medical physicists, as it includes contributions on potential applications of laser-based particle accelerators.

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