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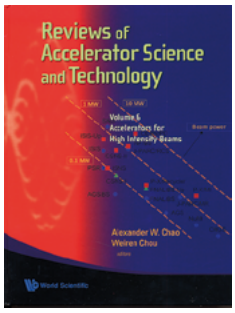

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Reviews of Accelerator Science and Technology
Volume 6. Accelerators for High Intensity Beams

World Scientific, Singapore, 2013

pp. VII + 311; £ 98.00
ISBN 9789814583244
e-book: £78
ISBN 9789814583268

The book contains fourteen papers on High Intensity Beams.

First of all Particle Physics themes are presented in close relationship with advances in technology, which introduces the concept of "intensity frontier research": future experiments rely on intensity upgrades, and these technological upgrades can be considered feasible just today. The same can be said for Nuclear Physics. Research themes as relevant as rare processes and neutrino physics are mentioned and described for Particle Physics and physics of hypernuclei, kaonic nuclei and neutron rich nuclei for Nuclear Physics.

So the book begins with these two exhaustive articles describing both the frontier of research in Physics Science and the tools necessary to carry out this intense activity, *i.e.* accelerator complexes able to provide high-intensity electron, proton and heavy-ion beams.

After this fascinating trip in the world of Modern Physics, another section of the book follows, made of three chapters, on the possible applications of high-intensity beams. Indeed this section is preceded by a chapter on Radioactive Ion Beams and Radiopharmaceuticals that describes several production methods, including targets and separation equipment. A review of the main facilities for production of radioactive beams is given, as well as some examples of production of radiopharmaceuticals. One of these three chapters in the application section is dedicated to Spallation Neutron Sources and Accelerator-Driven Systems: the message is that given their importance in applied science (energy, material engineering, technology and health), it is important to develop the demanding technology required. Two additional chapters in the application section are dedicated to Inertial Fusion Energy Production and Particle Beam Radiography.

The last section is dedicated to accelerators for high-intensity beams. First an extensive description of several features of synchrotrons and accumulator rings for hadron beams is given, including beam dynamics, space charge effects, injection and extraction and beam instrumentation. Then an article on Superconducting Hadron Linacs follows, describing the design of high-intensity linacs for light ions and pointing out specific features related to high intensity. An extensive review paper on ion injectors for High Intensity accelerators is then presented, discussing the importance of ion sources performance in terms of emittance, stability and controllability.

The last three papers of this technical section of the book are dedicated to particular sub-systems which are commonly used in high-intensity accelerators: charge strippers of heavy ions , targets for secondary beam extraction, high-intensity neutron beamlines.

Finally an extensive description of Beam-Materials Interactions concludes the book, giving some examples of application of these fundamental phenomena in some installations.

In conclusion, High Intensity Beams represent the most useful and feasible development path for accelerators. This book shows the huge field of frontier research allowed by these beams. At the same time a lot of information is provided on the technological advances that are necessary to build such performing accelerators. Therefore the book can be regarded as a very helpful tool both for students and for scientists.

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