The indispensable work offers a broad synoptic description of beams, applicable to a wide range of other devices, such as low-energy focusing and transport systems and high-power microwave sources. The monograph develops the material from the basic principles in a systematic way and discusses the underlying physics and validity of theoretical relationships, design formulas and scaling laws. Assumptions and approximations are clearly indicated throughout. This new, revised and updated edition has 10% additional content, and features, among others, a new chapter on beam physics research from 1993 to 2007, significant enhancement of chapter 6 on emittance variation, updated references and color image plates.

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Martin Reiser received his Ph.D. in physics in 1960 from the University of Mainz, Germany. From 1961 to 1964 he was assistant professor of physics at Michigan State University. In 1965, he joined the University of Maryland as associate professor of Electrical Engineering and Physics. He has been a full professor there since 1970. He was co-founder of the University of Maryland's Institute for Research in Electronics and Applied Physics (IREAP). His research interests are in the space charge physics of intense beams. Professor Reiser is the author of more than 300 research papers and served on numerous committees. In 1997/98 he was chair of the Executive Committee of the APS Division of Physics of Beams. He retired in 1998 as Professor Emeritus of Electrical and Computer Engineering from his teaching position and continues to work part-time with his research group in IREAP.
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