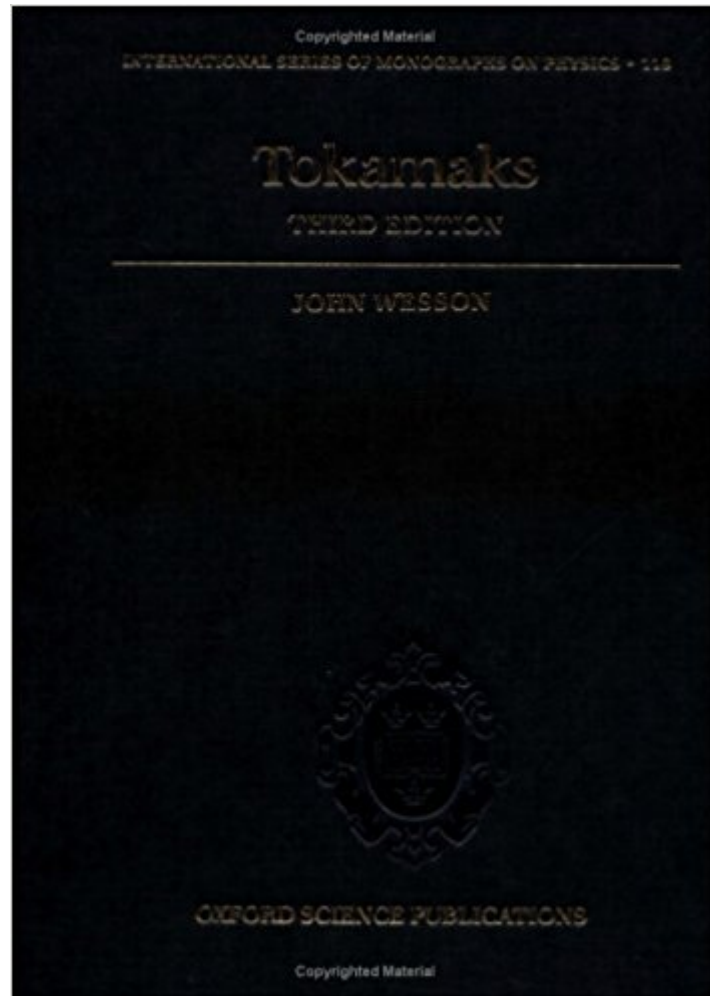




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Tokamaks (The International Series Of Monographs On Physics)



Synopsis

The tokamak (a doughnut-shaped vacuum chamber surrounded by magnetic coils) is the principal tool in controlled fusion research. This book acts as an introduction to the subject and a basic reference for theory, definitions, equations and experimental results. Since the first introductory account of tokamaks in 1987, when the tokamak had become the predominant device in the attempt to achieve a useful power source from the thermonuclear fusion, and the developments and advances in the subject covered in the second edition in 1997, following substantial research on large tokamaks (the long awaited achievement of significant amounts of fusion power and the problems involved in designing and building a tokamak reactor), the emphasis has been on preparing the ground for an experimental reactor. In addition, there have been further significant advances in understanding plasma behavior, such as the wider experience of internal transport barriers, the appreciation of the role of tearing models driven by neoclassical effects and insights from turbulence simulations. The third edition brings all of this up-to-date, building on the introductory account and developments of the first and second editions.

Book Information

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Customer Reviews

"The tokamak is the predominant device used to try to wring useful power from thermonuclear fusion. Wesson and a number of collaborating colleagues provide specialists already working in tokamak research with information about other areas of the subject, and those outside the field with

an introduction to the principal concepts, methods, and problems involved. He includes equations, formulas, and data that research workers often need. Among the topics are fusion, equilibrium, confinement, instabilities, diagnostics, plasma-surface interactions, and large tokamaks. He has updated the 1987 and 1997 editions to reflect developments in the science and technology."

--SciTech Book News

J.Wesson is a Senior Theoretical Physicist at JET Joint Undertaking, Abingdon, Oxon.

This book serves as an encyclopedia of the 60+ years of knowledge that come before us in this field. Usually Wesson just gives an overview of various topics and refers you to a long list of references for more information. The information is typically practical, apparently designed for an experimentalist in mind but it does delve into theory as necessary. It also talks about some past/and current big machines and their research objective. (I am really glad that I finally bought this book (though I wish I had waited a few more months for the 4th editions) but it is very helpful to have my own copy. This book is one of the ones that you read for one thing and then you get drawn into learning and a few sections or chapters later you have learned quite a lot. First book I would recommend buying as a fusion experimentalist grad student or scientist.

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