

Preface

Magneto-hydrodynamic instabilities, that can develop in a hot plasma, strongly limit the range of possible operation parameters of a fusion reactor. This issue was identified from the beginning of fusion research and a lot of attention has been paid in the field toward avoiding, stabilizing, or controlling these instabilities. During the last decades, remarkable progress has been made in practically all areas of instability control. This book aims to provide a concise introduction into this field, with the main focus on basic mechanisms of instability, their identification, and control. Experimental results and theoretical interpretation presented in the book are the current status of our understanding of this subject. One has to note that both the physics and the control of these instabilities are far from completely understood, in many cases, and remain as areas of active research. The research areas are very broad and it is extremely difficult to find an expert who can cover all these instabilities. This was the motivation for our joint work on this book. Different authors, all of them active physicists, working on different fusion devices, describe different subjects, and provide concise overviews of the research area in which they are working as senior researchers or heads of research groups.

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