



## Theory of Nuclear Fission

A Textbook

Series: Lecture Notes in Physics, Vol. 838

**Krappe**, Hans J., **Pomorski**, Krzysztof

1st Edition., 2011, IX, 319 p. 101 illus.

**Softcover**, ISBN 978-3-642-23514-6

Due: October 31, 2011

**69,95 €**

### About this book

This book brings together various aspects of the nuclear fission phenomenon discovered by Hahn, Strassmann and Meitner almost 70 years ago. Beginning with an historical introduction the authors present various models to describe the fission process of hot nuclei as well as the spontaneous fission of cold nuclei and their isomers. The role of transport coefficients, like inertia and friction in fission dynamics is discussed. The effect of the nuclear shell structure on the fission probability and the mass and kinetic energy distributions of the fission fragments is presented. The fusion-fission process leading to the synthesis of new isotopes including super-heavy elements is described. The book will thus be useful for theoretical and experimental physicists, as well as for graduate and PhD students.

**Content Level »** Research

**Keywords »** Large-scale collective motion - Nuclear fission - Nuclear thermodynamics

**Related subjects »** Energy Technology - Particle and Nuclear Physics

#### TABLE OF CONTENTS

From the contents: Introduction.- Potential Energy Surfaces.- Statistical Decay Model.- Scission Point Models.- Fission Dynamics.