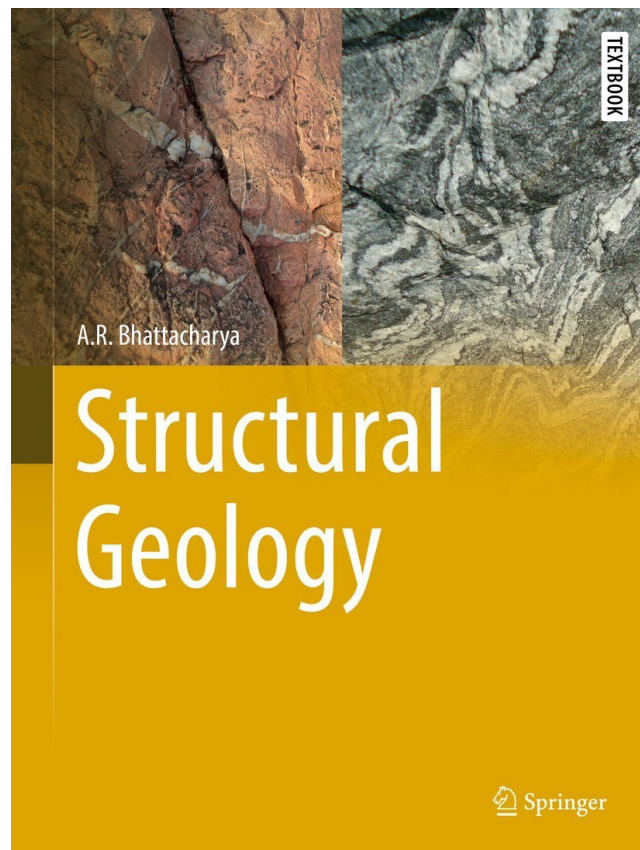


Book Review

STRUCTURAL GEOLOGY

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PROFESSOR A.R. Bhattacharya is a retired Professor of Geology from the University of Lucknow, India. For about four decades he taught and carried out research work in structural geology and this textbook is an outcome of his lifetime experiment. The book is primarily written for undergraduate students who want to take up structural geology at a higher level. It aims to be reader–friendly, with simple language and each topic is briefly explained. This book is complete with fundamentals of the field and practical aspects and highly illustrated diagrams and is divided into three parts which are presented in 20 chapters.

The Part 1, Fundamental Concepts—consists total of seven chapters. Chapter 1 entitled ‘Introduction to structural geology’ presents a panoramic view of the subject so that the reader systematically starts gearing up for an in–depth study

of the structural geology discipline. Chapter 2 provides the attitudes of the structures and it enables and develops the skill of independent fieldwork for researchers/readers. Chapters 3 and 4 highlight the force acting on a rock and related stress and strains thereby providing physico–mechanical aspects of structural geology. Chapter 5 describes a variety of strain estimation methods in deformed rocks. Chapter 6 on rheology deals with the deformation and flow of rocks which is an important aspect of structural geology. Chapter 7 describes the concept of deformation, explores the outline and important criteria of the deformation of rocks with elementary ideas.

Part 2 of the book is on structures, geometry and genesis and has eight chapters. Chapter 8 provides a description of various parts of the folds, their classification, theories of their origin and the significance of folds. Chapter 9 is on faults and

in this chapter a detailed description of faults in respect of their geometrical attributes, classification, recognition in the field, common rock types found at the fault zone and mechanism of faulting is discussed. Faults are important for the exploration of hydrocarbon, economic minerals and groundwater. Chapters 10 and 11 explain the geological conditions required describing the extensional regime commonly developed for normal and thrust fault. Chapter 12 describes the various geometries and types of strike–slip faults and the structures associated with these faults. Chapter 13 joints and fractures this chapter discusses joint and fracture mechanics and the causes of their formation. Chapter 14 provides foliation–forming processes and traces the deformation history of deformed rocks. Chapter 15 on lineation, explains various types of penetrative and non–penetrative lineation, genesis and significance of lineation study.

Part 3 has a wider perspective and has five chapters. Chapter 16 on the mechanisms of rock deformation, details the survey of various mechanics of rock deformation that operate on microscale and mesoscale. Chapter 17 on shear zone explores the concept of shear zones, their geometry,

rock types, formation, classification and significance. Chapter 18, describes some common shear sense indicators developed in rocks deformed by both ductile and brittle deformation. Chapter 19 describes and highlights some common deformation structures from a metamorphic perspective and the significance of porphyroblasts. Chapter 20 provides the occurrence, processes and significance of superposed folds.

Besides these 20 chapters, there are Appendices A and B about stereographic projection which represents planar and linear structures with examples. Similarly, Appendix B describes common effects of faults on outcrops. At the end of the book, there is a glossary that helps readers identify and acquire the vocabulary of the discipline.

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