Preface: Introduction to Structural Geology and Tectonics

This edited book consists of 19 main chapters dealing with various issues of structural geology and tectonics. In Chapter "Deep Structure and Deformation Structural Style of the Georgian Part of Lesser Caucasus Orogen", Alania et al. (2026) through fieldwork studies document that the main structural styles of the compressional structures in the Lesser Caucasus double wedge orogen are related to several detachments. In Chapter "Rare Field Evidence of Basal Breccia Within the Kruševac Lacustrine Basin: Constraints on the Late Oligocene (Early Miocene) Opening Across Southern Peri-Pannonian Intramontane Basins (Central Serbia)", Spahić et al. (2026) report large crystalline cobbles from the Kruševac lacustrine basin (Serbia) that possibly come from a nearby peri-Pannonian basal sequence. In Chapter "Field Guide to Coorg Block and the Adjoining Shear Zones, Southern Granulite Terrane, South India", Nanda and Rekha (2026) present a field guide for the Coorg Block and nearby shear zones from the Southern Granulite Terrane, India. In Chapter "Geodynamic Evolution of the Indo-Myanmar Ranges, NE India", Ovung and Nayak (2026) from the Indo-Myanmar range describe the geology and structures from the Neotethyan oceanic lithosphere and the flyschoidal deposits. In Chapter "Innovative Technology to Harness Geothermal Energy from Active Ridge Flanks and Oceanic Islands: Advantage for the Oil Industries to Bring Energy Transition", Chandrasekharam (2026) explains how to tap the geothermal energy from the Red Sea area in the most feasible way. In Chapter "Significance of Oriented-Core in Sub-surface Geological Exploration", Goswami (2026) presents how to measure and interpret structural geological data from drill cores (also see Chakraborty and Mukherjee 2020; and Chatterjee and Mukherjee 2023 in this context).

In Chapter "4D Monitoring of Analogue Models in CT Scanners Using Linear Markers of X-ray Highly Absorbent Materials", Pueyo et al. (2026) present the use of highly absorbent X-Ray markers to accurately monitor analogue models in 4D. In Chapter "Structural Form of Stratovolcanoes on Planetary Bodies: A Theoretical Perspectives and Model Validation", Sahoo et al. (2026) extended Dupuit's approximation to model the shape of different volcanoes in the solar system. In Chapter "Deformation Models Induced by Major Regional Scale Structures Beneath the Northeast India and the Contemporary Seismotectonics", Mohanty and Mohanty

(2026) attribute the India-Eurasia collision to be the main controlling factor of the southern Shillong region. On the other hand, the Assam foredeep and the central Shillong region developed without any role of the shallow/crustal-scale structures. In Chapter "Successive Studies of the 2011 Tohoku-Oki Earthquake Signatures from Global Navigation Satellite System Measurements", Ansari (2026a) discusses the 2011 Tohoku-Oki Japan earthquake's manifestations in terms of geodetic data on the Earth surface, the Pacific Ocean and in space. In Chapter "Review of Crustal Deformation Studies in Western India by Using Global Navigation Satellite System Measurements", Ansari (2026b) performs study of Global Navigation Satellite System and proves that the horizontal velocity trend at the southern portion of western India is opposite to that at the northern part. In Chapter "Uranium Geochemistry in Phosphate-Bearing Sedimentary Rocks of Masrana and Kimoi Blocks of the Mussoorie Syncline, Uttarakhand, India", Khan et al. (2026) discuss uranium geochemistry of phosphorites from the Kimoi and the Masrana blocks of the Mussoorie syncline, Lesser Himalaya, India. In Chapter "Structural Style and Deformation of the Gachsaran Formation in the Dezful Embayment of the Zagros Fold Thrust Belt, Chamshir Area, Iran", Tavakolian et al. (2026) present the structural geology of the Gachsaran Formation in the Dezful Embayment. This stratigraphic unit is the cap rock of the Asmari reservoir and therefore is important. In Chapter "Folding of Post-bijawar Dykes of Central India Around Hirapur", Singh et al. (2026a) report structures and mild metamorphism of the post-Bijawar dykes from central India. In Chapter "An Updated Geological Map of Hirapur and Adjoining Areas of Madhya Pradesh, Central India", Singh et al. (2026b) provide an updated map of the Hirapur and surrounding areas where granites and post-Bijawar dykes have been mapped. In Chapter "Field Observations of Dykes and Geometry of Igneous Enclaves in Ladakh Batholith Granitoids Around Taru, Leh, Ladakh, North India", Mir et al. (2026) provide a detailed account of dyke's attitudes from Ladakh area from field. In Chapter "Hydrocarbon Prospectively of the Ganga Basin (India) Based on Plate Tectonic Reconstruction", Mazumder and Kumar (2026) study the Indo-Gangetic plain and bring out a tectonic correlation with a part of Arabian plate and also western Indian basins. The strike-slip Najd Fault system well established in the Arabian plate is traced on the Ganga basin. In Chapter "Preliminary Study of Artificial Slope Facets from Coal Dump Sites", Raha et al. (2026) study few coal dump-sites from eastern India. Aspects of different morphologies of slopes and their stability issues were investigated. In Chapter "Potential Location for Relief Center for Earthquake Hazards Using Bipolar Fuzzy Graphs Example from Kutch Area, Gujarat, India", Kanvinde et al. (2026) apply bipolar fuzzy graph theory to identify the most feasible relief centers (first choice-Bhuj, second choice-Mandvi) in the Kutch region, Gujarat state in western India.

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