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Autore	Johnson M. R. W (Michael Raymond Walter)
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Nota di contenuto	Major features of the Earth and plate tectonics -- Driving mechanisms for plates, slab retreat and advance, and a cause of orogenesis -- Physical and chemical principles : rock deformation, isostasy, geochronology and heat production in the lithosphere -- Large-scale features of orogens : thrusts and folds -- Evolution of orogens -- Lateral spreading of orogens : foreland propagation, channel flow and weak zones in the crust -- Metamorphism in orogeny -- The erosion and exhumation of mountains -- Sedimentary history of the foredeep basins -- Deep structure, mountain support and phase changes -- Mountains and climate -- Secular change in orogeney.

Sommario/riassunto

Orogenesis, the process of mountain building, occurs when two tectonic plates collide - either forcing material upwards to form mountain belts such as the Alps or Himalayas or causing one plate to be subducted below the other, resulting in volcanic mountain chains such as the Andes. Integrating the approaches of structural geology and metamorphism, this book provides an up-to-date overview of orogenic research and an introduction to the physico-chemical properties of mountain belts. Global examples are explored, the interactioning roles of temperature and deformation in the orogenic process are reviewed, and important new concepts such as channel flow are explained. This book provides a valuable introduction to this fast-moving field for advanced undergraduate and graduate students of structural geology, plate tectonics and geodynamics, and will also provide a vital overview of research for academics and researchers working in related fields including petrology geochemistry and sedimentology.