Record Nr. UNINA9910254010403321 Autore Choudhuri Mainak Titolo Mantle Plumes and Their Effects [[electronic resource] /] / by Mainak Choudhuri, Michal Nemok Pubbl/distr/stampa Cham:,: Springer International Publishing:,: Imprint: Springer,, 2017 **ISBN** 3-319-44239-2 Edizione [1st ed. 2017.] Descrizione fisica 1 online resource (X, 137 p. 72 illus., 18 illus. in color.) Collana SpringerBriefs in Earth System Sciences, , 2191-589X Disciplina 551.116 Soggetti Structural geology Sedimentology Geophysics Structural Geology Geophysics/Geodesy Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Nota di bibliografia Includes bibliographical references. Nota di contenuto Introduction -- Elastic properties of the lithosphere -- Plumes and hotspots -- Dynamic crustal uplift due to plume activity -- Permanent crustal uplift due to plume activity -- Effects of plume related thermal anomaly -- Morphology of hotspots -- The great plume debate. This book presents a brief synopsis of the current academic Sommario/riassunto understanding of the plume hypothesis, its surface manifestations and shortcomings. It describes methods for estimating the uplift history of a region due to plume activity. Different models for the elastic properties of the lithosphere and its estimation as a background for plume emplacement are discussed, the plume hypothesis is introduced and the major plume types and their effect on the lithosphere are described. Two chapters are dedicated to the dynamic and permanent topography produced by an impinging plume head below the lithosphere and its estimation. The historical background of the plume

hypothesis, its criticisms and alternatives are presented.