

1. Record Nr.	UNINA9910299397103321
Autore	Semenov Vladimir
Titolo	Induction Soundings of the Earth's Mantle // by Vladimir Semenov, Maxim Petrishchev
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2018
ISBN	3-319-53795-4
Edizione	[1st ed. 2018.]
Descrizione fisica	1 online resource (113 pages)
Collana	GeoPlanet: Earth and Planetary Sciences, , 2190-5193
Disciplina	551.11
Soggetti	Geophysics Structural geology Mathematical physics Geophysics/Geodesy Structural Geology Mathematical Applications in the Physical Sciences
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	Impedances, sources and environments -- Impedances and tippers from one equation -- Modeling of Deep Soundings Study -- Results of deep soundings in Europe -- Electromagnetic monitoring.
Sommario/riassunto	At the heart of this book is the generalized theoretical approach that is applied to investigate the geoelectrical structure of the Earth's mantle. It also analyzes the results of regional and global induction sounding of the Earth's mantle and compares them with the results obtained by other geophysical methods. The generalized theoretical approach employs the Induction Law as a basis for identifying extended relations between magnetic field components, including their plane divergence, impedances and spatial derivatives. The estimations of impedance values and spatial derivatives are performed using the theory of stochastic processes. The book also considers the external sources of magnetic fields used for sounding the Earths mantle from the modern theory perspective, as well as the problem of coincidence of magneto-variation and magnetotelluric methods. Further, it discusses secular variations in the Earth's resistance caused by non-induction sources,

factors that are correlated with the number of earthquakes in the region and shifted in time with global indexes. It is a valuable resource for scientists applying deep induction soundings or interested in the structures of and processes in the Earth's interior.
