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Titolo	Ocean Acoustics // by Anatoly Kistovich, Konstantin Pokazeev, Tatiana Chaplina
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Descrizione fisica	1 online resource (XIII, 165 p.)
Collana	Springer Textbooks in Earth Sciences, Geography and Environment, , 2510-1307
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Soggetti	Oceanography Geophysics Acoustics Geophysics/Geodesy
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Introduction -- Mathematical model of acoustic processes -- Acoustic phenomena in the language of the theory of elasticity -- General properties and characteristic types of sound waves -- Flat sound waves -- Geometric acoustics -- Beam description of the sound field in inhomogeneous media -- Wave description of the sound field in inhomogeneous media -- The reflection of sound waves from the bottom of the ocean -- The scattering of sound by the roughness of the surface and bottom of the ocean.
Sommario/riassunto	This book presents a comprehensive overview of hydroacoustics and describes the physical basis of acoustic processes observed in the sea. In addition, it discusses the basic concepts and provides simplified models of sound propagation and acoustic phenomena at the boundary between environments. Lastly, the book examines in detail a number of applications of ocean acoustics and methods. The ocean is the last reserve of natural resources. It is also an essential element in the biosphere, ensuring the latter's balance, and plays a pivotal role in the Earth's climate system and global warming. Consequently, studying the ocean is one of humankind's most critical scientific tasks, but penetrating its mysteries is no mean feat. Acoustics (hydroacoustics) is

one of the most powerful tools for examining the water layer and beyond, since sound waves are the only type of radiation that can propagate over distances of hundreds and even thousands of kilometers in the ocean. This unique resource appeals to specialists working in the fields of ocean and atmosphere physics, students and postgraduate students studying sea physics and oceanology, and anyone who is interested in the problems the ocean is currently facing.

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