

Brekhovskikh L. M. *Waves in layered media.*
New York: Academic Press, 1960. 561 p.
[Acoustics Institute, Academy of Sciences, USSR]

A rather complete theory of wave propagation in stratified media is developed in this book. The wave as well as ray approaches are presented in various modifications. The main results can be used in the fields of sound wave propagation in the ocean, electromagnetic wave propagation in the atmosphere, and in the theory of optical filters, etc. [The SC[®] indicates that this book has been cited in over 1,420 publications since 1961.]

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"I believe that the success of my book, *Waves in Layered Media*, is due to the fact that it was written during the best period of my creative life. I began writing it at age 36 and finished it in three years. At that age one still has much energy. On the other hand, one has acquired some experience at this age. I had been familiar with world literature in the field already and had written some original works.

"At the very beginning there was my theoretical investigation of sound wave propagation in the sea in 1942. Being quite young, I was a member of a small scientific group the main task of which was to develop a means to fight German acoustical mines. I had to estimate the distance of propagation of a ship's noise or of a sound from a special source. The sea is a typical layered (stratified) medium. It is essentially the layer of the water bounded by a free sur-

face from above and by a sound absorbing bottom from below. The first, simplest version of the theory was developed during these stormy days. Later it turned out that the problem of propagation of electromagnetic waves is analogously formulated. So, later on I attacked this problem from two viewpoints—acoustically and electromagnetically. I followed such a course also while writing the book which has become a *Citation Classic*. It was published first in Moscow in Russian by Akademya Nauk.¹ The second edition was published in 1973.² The first edition in English appeared in 1960, the second in 1980.³

"The main hindrance in writing this book was my administrative duties. In late-1953, I was appointed director of the newly organized Institute of Acoustics of the Academy of Sciences of the USSR. Of course, this was accompanied by a great amount of work. I am still surprised now when I think about how I managed at that time to write the book which later turned out to be not a bad one.

"Publishing the book in English and its wide distribution helped me to find many scientists throughout the world with the same views. This helped spread my subsequent scientific ideas. This work probably accounts for my receiving the Rayleigh Gold Medal in 1977 from the English Acoustical Institute for work in underwater acoustics.

"The further development of ideas presented in *Waves in Layered Media* is presented in another of my books, *Ocean Acoustics*, published by Akademya Nauk.⁴ This book has been awarded the State Prize of the USSR.

"Finally, quite recently my new book^{5,6} has appeared in Russian and English practically at the same time. In this book the wide range of problems concerning sound propagation in the ocean as layered media is considered."

1. Brekhovskikh L. M. *Volny v sloistykh sredakh*. Moscow: Akademya Nauk, 1957. 501 p.
2., *Volny v sloistykh sredakh*. Moscow: Akademya Nauk, 1973. 343 p.
3., *Waves in layered media*. New York: Academic Press, 1960. 503 p.
4., ed. *Akustika okeana*. Moscow: Akademya Nauk, 1974. 693 p.
5. Brekhovskikh L. M. & Lysanov Y. P. *Fundamentals of ocean acoustics*. New York: Springer-Verlag, 1982. 250 p.
6., *Teoreticheskiye osnovy akoustiky okeana*. Leningrad: Hydrometeoizdat, 1982. 294 p.