



Supersonic Flow and Shock Waves

By Courant, Richard / Friedrichs, K. O.

Book Condition: New. Publisher/Verlag: Springer, Berlin | Courant and Friedrichs's classical treatise was first published in 1948 and the basic research for it took place during World War II. However, many aspects make the book just as interesting as a text and a reference today. It treats the dynamics of compressible fluids in mathematical form, and attempts to present a systematic theory of nonlinear wave propagation, particularly in relation to gas dynamics. Written in the form of an advanced textbook, it should appeal to engineers, physicists and mathematicians alike. | I. Compressible Fluids.- 1. Qualitative differences between linear and nonlinear waves.- A. General Equations of Flow. Thermodynamic Notions.- 2. The medium.- 3. Ideal gases, polytropic gases, and media with separable energy.- 4. Mathematical comments on ideal gases.- 5. Solids which do not satisfy Hooke's law.- 6. Discrete media.- 7. Differential equations of motion.- 8. Conservation of energy.- 9. Enthalpy.- 10. Isentropic flow. Steady flow. Subsonic and supersonic flow.- 11. Acoustic approximation.- 12. Vector form of the flow equations.- 13. Conservation of circulation. Irrotational flow. Potential.- 14. Bernoulli's law.- 15. Limit speed and critical speed.- B. Differential Equations for Specific Types of Flow.- 16. Steady flows.- 17. Non-steady flows.- 18. Lagrange's...



READ ONLINE
[2.11 MB]

Reviews

An exceptional pdf and the typeface utilized was fascinating to read through. It can be written in straightforward words and phrases instead of confusing. I am just quickly could possibly get a delight of looking at a written ebook.

-- Prof. Arlie Bogan

It is in a single of the best book. This is for those who state there had not been a well worth reading through. Once you begin to read the book, it is extremely difficult to leave it before concluding.

-- Dr. Barney Robel Jr.