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Titolo	Aerodynamic noise : an introduction for physicists and engineers // Tarit Bose
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Descrizione fisica	1 online resource (174 p.)
Collana	Springer aerospace technology, , 1869-1730
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Soggetti	Aerodynamic noise - Mathematical models
Lingua di pubblicazione	Inglese
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Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	From the Contents: Sound as a Wave -- The Case of a Stretched String -- Aerial Waves in Tubes and Closed Rooms -- Relations Between Pressure, Density and Velocity Fluctuations -- Periodic Phenomena -- Probability, Correlations and Spectra -- Monopole, Dipole and Quadrupole Models -- Fluctuating Monopole.- Lighthill's Theory of Aerodynamic Noise -- Lighthill's Equation of Sound -- Subsonic Jet Without Considering Convection -- Dimensional Analysis by Lighthill -- Subsonic Jet Noise (Including Effect of Convection) -- Doppler Effect -- Experimental Determination of the Convection Velocity -- Computational Aeroacoustics -- Numerical Non-dissipative Schemes -- Numerical Solution of Acoustiv Propagation of Turbulence -- Further Topics in Aerodynamic Noise -- Supersonic Jet Noise -- Sound at Solid Boundaries -- Combustion Noise -- Sonic Boom -- Measurement Techniques.
Sommario/riassunto	Aerodynamic Noise extensively covers the theoretical basis and mathematical modeling of sound, especially the undesirable sounds produced by aircraft. This noise could come from an aircraft's engine—propellers, fans, combustion chamber, jets—or the vehicle itself—external surfaces—or from sonic booms. The majority of the sound produced is due to the motion of air and its interaction with solid boundaries, and this is the main discussion of the book. With problem sets at the end of each chapter, Aerodynamic Noise is ideal for graduate students of mechanical and aerospace engineering. It may

also be useful for designers of cars, trains, and wind turbines.
