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5.4 TRAFFIC NOISE MODELING; 5.5 RAILROAD NOISE; 5.6 AIRCRAFT NOISE; Chapter 6. WAVE ACOUSTICS; 6.1 RESONANCE; 6.2 WAVE EQUATION; 6.3 SIMPLE SOURCES; 6.4 COHERENT PLANAR SOURCES; 6.5 LOUDSPEAKERS; Chapter 7. SOUND AND SOLID SURFACES; 7.1 PERFECTLY REFLECTING INFINITE SURFACES; 7.2 REFLECTIONS FROM FINITE OBJECTS; 7.3 ABSORPTION; 7.4 ABSORPTION MECHANISMS; 7.5 ABSORPTION BY NONPOROUS ABSORBERS; 7.6 ABSORPTION BY RESONANT ABSORBERS; Chapter 8. SOUND IN ENCLOSED SPACES; 8.1 STANDING WAVES IN PIPES AND TUBES; 8.2 SOUND PROPAGATION IN DUCTS; 8.3 SOUND IN ROOMS; 8.4 DIFFUSE-FIELD MODEL OF ROOMS; 8.5 REVERBERANT FIELD EFFECTS; Chapter 9. SOUND TRANSMISSION LOSS; 9.1 TRANSMISSION LOSS; 9.2 SINGLE PANEL TRANSMISSION LOSS THEORY; 9.3 DOUBLE-PANEL TRANSMISSION LOSS THEORY; 9.4 TRIPLE-PANEL TRANSMISSION LOSS THEORY; 9.5 STRUCTURAL CONNECTIONS; Chapter 10. SOUND TRANSMISSION IN BUILDINGS; 10.1 DIFFUSE FIELD SOUND TRANSMISSION; 10.2 STC RATINGS OF VARIOUS WALL TYPES; 10.3 DIRECT FIELD SOUND TRANSMISSION; 10.4 EXTERIOR TO INTERIOR NOISE TRANSMISSION; Chapter 11. VIBRATION AND VIBRATION ISOLATION; 11.1 SIMPLE HARMONIC MOTION; 11.2 SINGLE DEGREE OF FREEDOM SYSTEMS; 11.3 VIBRATION ISOLATORS; 11.4 SUPPORT OF VIBRATING EQUIPMENT; 11.5 TWO DEGREE OF FREEDOM SYSTEMS; 11.6 FLOOR VIBRATIONS; Chapter 12. NOISE TRANSMISSION IN FLOOR SYSTEMS; 12.1 TYPES OF NOISE TRANSMISSION; 12.2 AIRBORNE NOISE TRANSMISSION; 12.3 FOOTFALL NOISE; 12.4 STRUCTURAL DEFLECTION; 12.5 FLOOR SQUEAK; Chapter 13. NOISE IN MECHANICAL SYSTEMS; 13.1 MECHANICAL SYSTEMS; 13.2 NOISE GENERATED BY HVAC EQUIPMENT; 13.3 NOISE GENERATION IN FANS; 13.4 NOISE GENERATION IN DUCTS; 13.5 NOISE FROM OTHER MECHANICAL EQUIPMENT; Chapter 14. SOUND ATTENUATION IN DUCTS; 14.1 SOUND PROPAGATION THROUGH DUCTS; 14.2 SOUND PROPAGATION THROUGH PLENUMS

## Sommario/riassunto

Architectural Acoustics offers a comprehensive overview of acoustical science at a level suitable for either advanced undergraduate or introductory graduate courses in architectural design and architectural engineering. The text is organized according to how sound interacts with built structures, going from simple geometries through complex building structures. The book begins with a brief but useful history of architecture and the role of acoustics, as well as overview of human perception of, sound, and then progresses through topics ranging from acoustic measurement, noise metrics and envi