1. Record Nr. UNINA9910779479203321

Autore	Lieuwen Timothy C.
Titolo	Unsteady combustor physics / / Tim C. Lieuwen [[electronic resource]]
Pubbl/distr/stampa	Cambridge : , : Cambridge University Press, , 2013
ISBN	1-316-08958-4 1-139-57945-2 1-139-57343-8 1-139-57263-6 1-139-05996-3 1-139-57088-9 1-139-56907-4 1-283-63864-9 1-139-56997-X
Descrizione fisica	1 online resource (xix, 405 pages) : digital, PDF file(s)
Disciplina	621.43/3
Soggetti	Gas-turbines - Combustion Heat - Transmission - Mathematics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Title from publisher's bibliographic system (viewed on 05 Oct 2015).
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Cover; UNSTEADY COMBUSTOR PHYSICS; Title; Copyright; Summary Contents; Detailed Contents; Introduction; References; Overview of the Book; 1 Overview and Basic Equations; 1.1. Thermodynamic Relations in a Multicomponent Perfect Gas; 1.2. Continuity Equation; 1.3. Momentum Equation; 1.4. Species Conservation Equation; 1.5. Energy Equation; 1.6. Nomenclature; 1.6.1. Latin Alphabet; 1.6.2. Greek Alphabet; 1.6.3. Subscripts; 1.6.4. Superscripts; 1.6.5. Other Symbols; Exercises; References; 2 Decomposition and Evolution of Disturbances; 2.1. Descriptions of Flow Perturbations 2.2. Small-Amplitude Propagation in Uniform, Inviscid Flows2.2.1. Decomposition Approach; 2.2.2. Comments on Decomposition; 2.2.3. Molecular Transport Effects on Decomposition; 2.3. Modal Coupling Processes; 2.3.1. Coupling through Boundary Conditions; 2.3.2. Coupling through Flow Inhomogeneities; 2.3.3. Coupling through

Nonlinearities; 2.4. Energy Density and Energy Flux Associated with Disturbance Fields; 2.5. Linear and Nonlinear Stability of Disturbances; 2.5.1. Linearly Stable/Unstable Systems; 2.5.2. Nonlinearly Unstable Systems; 2.5.3. Forced and Limit Cycling Systems
2.5.3.1. Example: Forced Response of Lightly Damped, Linear Systems2.5.3.2. Example: Limit Cycling Systems; 2.5.3.3. Example: Forced Response of Limit Cycling Systems; 2.5.3.4. Nonlinear Interactions between Multiple Oscillators; Exercises; References; 3 Hydrodynamic Flow Stability I: Introduction; 3.1. Normal Modes in Parallel Flows: Basic Formulation; 3.2. General Results for Temporal Instability; 3.2.1. Necessary Conditions for Temporal Instability; 3.2.2. Growth Rate and Disturbance Propagation Speed Bounds; 3.3. Convective and Absolute Instability
3.4. Extended Example: Spatial Mixing Layer3.5. Global Stability and Nonparallel Flows; Exercises; References; 4 Hydrodynamic Flow Stability II: Common Combustor Flow Fields; 4.1. Free Shear Layers; 4.1.1. Flow Stability and Unsteady Structure; 4.1.2. Effects of Harmonic Excitation; 4.2. Wakes and Bluff Body Flow Fields; 4.2.1. Parallel Flow Stability Analysis; 4.2.2. Bluff Body Wake; 4.2.3. Separated Shear Layer; 4.2.4. Effects of Harmonic Excitation; 4.3. Jets; 4.3.1. Parallel Flow Stability Analysis; 4.3.2. Constant Density Jet Dynamics; 4.3.3. Effects of Harmonic Excitation
4.3.4. Jets in Cross Flow4.4. Swirling Jets and Wakes; 4.4.1. Vortex Breakdown; 4.4.2. Swirling Jet and Wake Dynamics; 4.4.3. Effects of Harmonic Excitation; 4.5. Backward-Facing Steps and Cavities; 4.5.1. Parallel Flow Stability Analysis; 4.5.2. Unsteady Flow Structure; 4.8. Exercises; References; 5 Acoustic Wave Propagation I - Basic Concepts; 5.1. Traveling and Standing Waves; 5.2. Boundary Conditions: Reflection Coefficients and Impedance; 5.3. Natural Modes of Simple Geometries; 5.3.1. One-Dimensional Modes; 5.3.2. Multidimensional Rectangular Duct Modes; 5.3.3. Circular Duct Modes
5.3.4. Lumped Elements and Helmholtz Resonators

Sommario/riassunto

Developing clean, sustainable energy systems is a pre-eminent issue of our time. Most projections indicate that combustion-based energy conversion systems will continue to be the predominant approach for the majority of our energy usage. Unsteady combustor issues present the key challenge associated with the development of clean, high-efficiency combustion systems such as those used for power generation, heating or propulsion applications. This comprehensive study is unique, treating the subject in a systematic manner. Although this book focuses on unsteady combusting flows, it places particular emphasis on the system dynamics that occur at the intersection of the combustion, fluid mechanics and acoustic disciplines. Individuals with a background in fluid mechanics and combustion will find this book to be an incomparable study that synthesises these fields into a coherent understanding of the intrinsically unsteady processes in combustors.

2. Record Nr. UNISA996392595003316

Autore	Mason William, Anabaptist
Titolo	A little starre, giving some light into the counsels and purposes of God revealed in the Scriptures. Or A catechisme [[electronic resource]] : wherein these ensuing principles. 1. What God is, and how he manifests himselfe. 2 Why he made the world and man. 3. Mans condition, what, 1. by creation. 2. By his fall. 3. By being restored by Jesus Christ. 4 The uses and ends of the law. 5. What the Gospell is. 6. Justification what it is. 7. Sanctification what, and how it is wrought. 8. What repentance is. 9. The use and ends of the Scriptures. 10. What true prayer is. 11. Baptisme, and the Lords Supper, why, and how used. 12. Generall redemption what, and how to be adjudged of. 13. Resurrection and judgement what. 14. Heaven and Hell what, in truth and misterie. All which are briefly by way of question and answer opened and explained. / / By VVilliam Mason
Pubbl/distr/stampa	London, : Printed by G.D. for Giles Calvert at the Black Spread-Eagle neer the west end of Pauls., [1653]
Descrizione fisica	[14], 186 p
Soggetti	Catechisms, English Christianity - Essence, genius, nature
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Publication date from Wing. Annotation on Thomason copy: "may. 24 1653". Reproduction of the original in the British Library.
Sommario/riassunto	eebo-0018