1. Record Nr. UNINA9910350302403321

Autore	Sun Mingbo
Titolo	Jet in Supersonic Crossflow [[electronic resource] /] / by Mingbo Sun, Hongbo Wang, Feng Xiao
Pubbl/distr/stampa	Singapore : , : Springer Singapore : , : Imprint : Springer, , 2019
ISBN	981-13-6025-1
Edizione	[1st ed. 2019.]
Descrizione fisica	1 online resource (XIV, 284 p. 237 illus., 181 illus. in color.)
Disciplina	620.1064
Soggetti	Fluid mechanics Fluids Aerospace engineering Astronautics Engines Machinery Applied mathematics Engineering mathematics Physics Engineering Fluid Dynamics Fluid- and Aerodynamics Aerospace Technology and Astronautics Engine Technology Mathematical and Computational Engineering Numerical and Computational Physics, Simulation
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Introduction -- Spatial distribution of gaseous jet in supersonic crossflow -- Flow structures of gaseous jet in supersonic crossflow -- Mixing characteristics of gaseous jet in supersonic crossflow -- Combustion characteristics of gaseous jets in the supersonic crossflow -- Liquid jet primary breakup in supersonic crossflow.
Sommario/riassunto	Based on research into jets in supersonic crossflow carried out by the authors' team over the past 15 years, this book summarizes and

presents many cutting-edge findings and analyses on this subject. It tackles the complicated mixing process of gas jets and atomization process of liquid jets in supersonic crossflow, and studies their physical mechanisms. Advanced experimental and numerical techniques are applied to further readers' understanding of atomization, mixing, and combustion of fuel jets in supersonic crossflow, which can promote superior fuel injection design in scramjet engines. The book offers a valuable reference guide for all researchers and engineers working on the design of scramjet engines, and will also benefit graduate students majoring in aeronautical and aerospace engineering.