

1. Record Nr.	UNINA9910957817003321
Titolo	Thermal-hydraulics for space power, propulsion, and thermal management system design // edited by William J. Krotiuk
Pubbl/distr/stampa	Washington, D.C., : American Institute of Aeronautics and Astronautics, c1990
ISBN	1-60086-596-8 1-60086-377-9
Edizione	[1st ed.]
Descrizione fisica	1 online resource (348 p.)
Collana	Progress in astronautics and aeronautics ; ; v. 122
Altri autori (Persone)	KrotiukWilliam J
Disciplina	629.1 s 629.47/4
Soggetti	Space vehicles - Design and construction Space vehicles - Thermodynamics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	""Cover""; ""Title""; ""Copyright""; ""Table of Contents""; ""Preface""; ""Chapter 1. Overview of Thermal-Hydraulic Aspects of Current Space Projects""; ""Space Station Thermal Management Systems""; ""Thermal Design of the Space Station Free-Flying Platforms""; ""SP-100 Space Reactor Power System""; ""Advanced Multimegawatt Space Nuclear Power Concepts""; ""Propulsion Systems""; ""Chapter 2. Space Station Two-Phase Thermal Management""; ""Space Station Mechanical Pumped Loop""; ""Capillary Pumped Loop Supporting Technology"" ""Chapter 3. Startup Thaw Concept for the SP-100 Space Reactor Power System""""Chapter 4. Calculational Methods and Experimental Data for Microgravity Conditions""; ""Chapter 5. Isothermal Gas-Liquid Flow at Reduced Gravity""; ""Chapter 6. Vapor Generation in Aerospace Applications""; ""Low-Gravity Flow Boiling""; ""Computation of Space Shuttle High-Pressure Cryogenic Turbopump Ball Bearing Two-Phase Coolant Flow""; ""Chapter 7. Reduced-Gravity Condensation""; ""Author Index""
Sommario/riassunto	Addressing the application of low-gravity fluid-thermal control systems to advanced space-based systems and designs, this volume treats design problems associated with current space programs that employ advanced fluid-thermal systems. It brings together all the technical

knowledge necessary to design advanced fluid-thermal space systems. The text summarizes low-gravity fluid-thermal behavior, describes past and planned experimental activities, surveys existing thermal-hydraulic computer codes, and underscores areas that require further technical understanding. Engineers, designers, and researchers will be able to determine the status and limitations of the current knowledge of low-gravity fluid-thermal behavior and identify areas of future research. Educators will find the system descriptions useful in identifying areas for educational emphasis and the technical discussions helpful in describing current analytical methods and theories.

---