1. Record Nr. UNINA9910457667503321 Thermal design principles of spacecraft and entry bodies [[electronic Titolo resource] /] / edited by Jerry T. Bevans Pubbl/distr/stampa New York, : Academic Press, 1969 **ISBN** 1-60086-495-3 1-60086-276-4 Descrizione fisica 1 online resource (876 p.) Collana Progress in astronautics and aeronautics; ; v. 21 Altri autori (Persone) BevansJerry T Disciplina 629.4/152 Space vehicles - Thermodynamics Soggetti Electronic books. Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia "A collection of technical papers drawn mainly from the AAIA 3rd Note generali Thermophysics Conference, June 24-26, 1968, subsequently revised for this volume." Nota di bibliografia Includes bibliographical references and index. ""COVER""; ""TITLE""; ""COPYRIGHT""; ""THE THERMOPHYSICS Nota di contenuto COMMITTEE, 1967 and 1968""; ""PREFACE""; ""EDITORIAL COMMITTEE FOR VOLUME 21""; ""CONTENTS""; ""I. THERMAL PROCESSES AND THERMAL DESIGN""; ""I.I Thermal Analysis""; ""Higher-Order Approximations for Lumped System Analysis of Evacuated Enclosures"; ""Optical Measurements of the Radiation Configuration Factor""; ""Optical Shape Factor Data Processing through Computer Graphics""; ""An Experimental Technique for Measuring Local Solar Irradiation with a Model Spacecraft"" ""An Approximate Analytic Solution of the Steady-State Thermal Design Problem of Space Radiators"""I.2 Entry Heating: Convection, Radiation, and Ablation""; ""Radiative Transport in Inviscid Nonadiabatic Stagnation-Region Shock Layers""; ""Radiation Transfer through High-Temperature Shock Layers", ""Remote Sensing of Rarefied Gas Flows through a Fluorescence Technique""; ""Thermodynamic Performance of Carbon in Hyperthermal Environments"; ""A Rapid Technique for Estimating Ablative Heat Shield Weights from Plasma Jet Test Data"" ""Surface Oxidation with Streamwise Variation of Wall Reactivity"""" Hypersonic, Diffusion-Controlled Oxidation of Tungsten""; ""I.3 Rocket Exhaust Effects""; ""Spectral Radiance of Model Rocket Exhaust Plumes

at High Altitudes""; ""Effects of the LM Descent Engine Exhaust on Lunar Surface Temperatures""; ""I.4 Lunar and Planetary Vehicles Design""; ""A Study of the Thermal Kill of Viable Organisms during Mars Atmospheric Entry""; ""Prediction of the Martian Thermal Environment""; ""Thermal Control Aspects of a Stationary Martian Surface Laboratory"" ""Thermal Testing under Simulated Martian Environment"""LM Passive Thermal Design and Test""; ""II. THERMOPHYSICAL PROPERTIES FOR DESIGN""; ""II. 1 Remote Measurements""; ""Determination of Optical and Physical Properties of Artificial Satellites by Passive Ground-Based Photometry""; ""Predicting Lunar Temperatures""; ""Lunar Surface Thermal Characteristics during Eclipse from Surveyors III, V and after Sunset from Surveyor V""; ""II.2 Thermal Radiation Properties""; ""Emission, Total Internal Reflection, and Tunneling of Thermal Radiation in Metals""

""Measurements of Thermal Radiation of Solids at Liquid-Helium Temperatures"""A Technique for the Measurement of Spectral Reflectances at Low Temperatures in the Infrared and Far Infrared""; ""Development of Phase-Change Coatings""; ""II.3 Joint Conductance""; ""Simultaneous Radiation and Conduction between Rough Surfaces""; ""Thermal Conductance of Two-Dimensional Constrictions""; ""An Exact Solution for Thermal Conduction through a Two-Dimensional Eccentric Constriction""

""Effects of Transient Pressure Environments on Heat Transfer in One-Dimensional Composite Slabs with Contact Resistance""