
PREFACE

EUCASS (European Conference for Aero-Space Sciences) is a scientific association at the service of research scientists, engineers, and decision makers active in aeronautical and space sciences.

EUCASS, which is an international nonprofit association under the Belgian law, addresses all topics of interest to aerospace, from research challenges to long-term programmes and prospective. It organizes regular conferences, workshops, and meetings. Its goal is to attract the best specialists from Europe and elsewhere, and to create a commonwealth of interest and challenges where information and ideas circulate freely and swiftly, where the currently scattered European knowledge is exchanged much faster and cross-fertilised. EUCASS is the cradle that nurtures a friendly and lively community spirit among all players. It started its activities in 2005 by organizing the first-ever European conference in Moscow, followed at a biennial rate in Brussels and Versailles.

In order to contribute to the dissemination of scientific knowledge, we have launched this EUCASS Book Series, the first and second volumes of which were dedicated to Propulsion Physics and presented a selection of the lectures given in Brussels in July 2007.

EUCASS is organized in several permanent Technical Committees (TC). One of them is the Flight Physics TC. Within the broad EUCASS framework, the specific purpose of the Flight Physics TC is to promote the technology, sciences, and arts of flight physics and to help those engaged in these pursuits to develop their skills and those of their students.

This third volume of the EUCASS Book Series on Advances in Aerospace Sciences is dedicated to Flight Physics. It comprises a selected collection of 43 papers presented at the 3rd European Conference for Aerospace Sciences held in Versailles, France, July 06-10, 2009. The current volume is the result of a long review process. About 1/3 of the total number of papers accepted for presentation at the conference was later selected by the volume editors, then edited by an international body of peer reviewers.

The volume includes six chapters covering experimental, theoretical and numerical aspects of the flight physics:

Chapter One Aerodynamics

Chapter Two Shock Interaction

Chapter Three High Enthalpy Flows

Chapter Four Heat Transfer

Chapter Five Aeroacoustics

Chapter Six Flow Control

To easily identify the material of interest, the reader is invited to consult the brief paper summaries compiled at the start of each chapter.

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