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Nota di contenuto	1. INTRODUCTION -- 1.1. Introduction -- 1.2. History -- 1.3. Wireless communications in a HAP environment -- 1.4. Candidate standards for provision of services and applications from HAPs -- 1.5. Overview of past and present HAP related projects, trials and development plans -- 1.6. References -- 2. AERONAUTICS AND ENERGETICS -- 2.1. Operating environment and related challenges -- 2.2. Types of airborne vehicles used for HAPs -- 2.3. Power subsystem alternatives -- 2.4. Flight / altitude control -- 2.5. Typical characteristics of HAP aircraft and airships -- 2.6. References -- 3. OPERATING SCENARIOS AND REFERENCE ARCHITECTURES -- 3.1. Operating scenarios -- 3.2. Antenna requirements and related challenges -- 3.3. System and network architecture of HAP-based communication systems -- 3.4. References -- 4. APPLICATIONS AND BUSINESS MODELLING -- 4.1. Introduction -- 4.2. Applications and services -- 4.3. Business Model Introduction -- 4.4. Service Provider Centric Models -- 4.5. HAP

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Sommario/riassunto

In this book, the authors provide a thorough overview of the state of the art in high-altitude platform (HAP) enabling technologies, addressing recent research activities and results. In addition, the book explores the enabling technologies and economics of HAP-based communication systems, including issues related to aeronautics, applications and business modelling, as well as future trends. Furthermore, the authors discuss broadband wireless communications from HAPs, the operating environment, and advanced communication techniques for efficient radio link resource management. Similarly, the authors complement radio frequency (RF) dominated issues with free space optical communications in the HAP operating environment, focusing on physical and networking layers. Finally, the book addresses the multiple HAP constellations planning procedure and discusses the networking implications of using multiple HAPs. Key Features: . Focuses on placing HAPs in the perspective of current and future broadband wireless communication systems. Offers an overview of the constraints affecting HAP-based broadband communications. Provides a thorough overview and state of the art of the HAP enabling technologies, including recent research activities and future directions. Examines the operating environment, advanced communication techniques for efficient radio link resource management, and suitable antennas. Addresses multiplatform constellations, presenting the multiple HAP constellation planning procedure and discussing the networking implications of using multiple HAPs This book will be of valuable interest to researchers and practitioners in the areas of wireless communications, satellite communications and high-altitude platforms, and development engineers involved in the design and development of HAP systems.
