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Nota di contenuto	Airborne Measurements for Environmental Research; Contents; Preface; A Tribute to Dr. Robert Knollenberg; List of Contributors; 1 Introduction to Airborne Measurements of the Earth Atmosphere and Surface; 2 Measurement of Aircraft State and Thermodynamic and Dynamic Variables; 2.1 Introduction; 2.2 Historical; 2.3 Aircraft State Variables; 2.3.1 Barometric Measurement of Aircraft Height; 2.3.2 Inertial Attitude, Velocity, and Position; 2.3.2.1 System Concepts; 2.3.2.2 Attitude Angle Definitions; 2.3.2.3 Gyroscopes and Accelerometers; 2.3.2.4 Inertial-Barometric Corrections 2.3.3 Satellite Navigation by Global Navigation Satellite Systems2.3.3.1 GNSS Signals; 2.3.3.2 Differential GNSS; 2.3.3.3 Position Errors and Accuracy of Satellite Navigation; 2.3.4 Integrated IMU/GNSS Systems for Position and Attitude Determination; 2.3.5 Summary, Gaps, Emerging Technologies; 2.4 Static Air Pressure; 2.4.1 Position Error; 2.4.1.1 Tower Flyby; 2.4.1.2 Trailing Sonde; 2.4.2 Summary; 2.5 Static Air Temperature; 2.5.1 Aeronautic Definitions of Temperatures; 2.5.2 Challenges of Airborne Temperature Measurements; 2.5.3 Immersion

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Sommario/riassunto

This first comprehensive review of airborne measurement principles covers all atmospheric components and surface parameters. It describes the common techniques to characterize aerosol particles and cloud/precipitation elements, while also explaining radiation quantities and pertinent hyperspectral and active remote sensing measurement techniques along the way. As a result, the major principles of operation are introduced and exemplified using specific instruments, treating both classic and emerging measurement techniques. The two editors head an international community of eminent scientists
