

1. Record Nr.	UNISALENTO991001238979707536
Autore	De Siano, Rita
Titolo	L'integrazione monetaria : un rischio o un'opportunita per le regioni d'Europa? / Rita De Siano, Marcella D'Uva, Giovanna Messina
Pubbl/distr/stampa	Napoli : Liguori, 2004
ISBN	882073771X
Descrizione fisica	IX, 197p. ; 24 cm
Collana	Economia ; 15
Altri autori (Persone)	D'Uva, Marcellaauthor Messina, Giovanna
Disciplina	332
Soggetti	Sistema monetario europeo
Lingua di pubblicazione	Italiano
Formato	Materiale a stampa
Livello bibliografico	Monografia

2. Record Nr.	UNINA9910786438803321
Autore	Nebylov Alexander
Titolo	Aerospace Sensors // Alexander V. Nebylov
Pubbl/distr/stampa	New York : , : Momentum Press, LLC, , [2013] ©2013
ISBN	1-283-89600-1 1-60650-061-9
Descrizione fisica	1 online resource (378 p.)
Collana	Sensors technology series
Disciplina	621.381536
Soggetti	Detectors Aerospace engineering
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Series preface -- Preface -- Acknowledgments -- About the series editor -- About the editor -- 1. Introduction -- 1.1 General considerations -- 1.1.1 Types of aerospace vehicles and missions -- 1.1.2 The role of sensors and control systems in aerospace -- 1.1.3 Specific design criteria for aerospace vehicles and their sensors -- 1.1.4 Physical principles influencing primary aerospace sensor design -- 1.1.5 Reference frames accepted in aviation and astronautics -- 1.2 Characteristics and challenges of the atmospheric environment -- 1.2.1 Components of the earth's atmosphere -- 1.2.2 Stationary models of the atmosphere -- 1.2.3 Anisotropy and variability in the atmosphere -- 1.2.4 Electrical charges in the atmosphere -- 1.2.5 Electromagnetic wave propagation in the atmosphere -- 1.2.6 Geomagnetism -- 1.2.7 The planetary atmosphere -- 1.3 Characteristics and challenges of the space environment -- 1.3.1 General considerations -- 1.3.2 Near-earth space -- 1.3.3 Circumsolar (near-sun) space -- 1.3.4 Matter in space -- 1.3.5 Distances and time scales in deep space -- References -- 2. Air pressure-dependent sensors -- 2.1 Basic aircraft instrumentation -- 2.2 Fundamental physical properties of airflow -- 2.2.1 Fundamental airflow physical property definitions -- 2.2.1.1 Pressure -- 2.2.1.2 Air density -- 2.2.1.3 Temperature -- 2.2.1.4 Flow velocity

-- 2.2.2 The equation of state for a perfect gas -- 2.2.3 Extension of definitions: total, dynamic, static, and stagnation -- 2.2.4 The speed of sound and mach number -- 2.2.4.1 The speed of sound -- 2.2.4.2 Mach number and compressibility -- 2.2.5 The source of aerodynamic forces -- 2.3 Altitude conventions -- 2.4 Barometric altimeters -- 2.4.1 Theoretical considerations -- 2.4.1.1 The troposphere -- 2.4.1.2 The stratosphere -- 2.4.2 Barometric altimeter principles and construction -- 2.4.3 Barometric altimeter errors -- 2.4.3.1 Methodical errors -- 2.4.3.2 Instrumental errors -- 2.5 Airspeed conventions -- 2.6 The manometric airspeed indicator -- 2.6.1 Manometric airspeed indicator principles and construction -- 2.6.2 Theoretical considerations -- 2.6.2.1 Subsonic incompressible operation -- 2.6.2.2 Subsonic compressible operation -- 2.6.2.3 Supersonic operation -- 2.6.3 Manometric airspeed indicator errors -- 2.6.3.1 Methodical errors -- 2.6.3.2 Instrumental errors -- 2.7 The vertical speed indicator (VSI) -- 2.7.1 VSI principles and construction -- 2.7.2 Theoretical considerations -- 2.7.2.1 Lag rate (time constant) -- 2.7.2.2 Sensitivity to mach number -- 2.7.2.3 Sensitivity to altitude -- 2.7.3 VSI errors -- 2.8 Angles of attack and slip -- 2.8.1 The pivoted vane -- 2.8.2 The differential pressure tube -- 2.8.3 The null-seeking pressure tube -- References -- Appendix --

3. Radar altimeters -- 3.1 Introduction -- 3.1.1 Definitions -- 3.1.2 Altimetry methods -- 3.1.3 General principles of radar altimetry -- 3.1.4 Classification by different features -- 3.1.5 Application and performance characteristics -- 3.1.5.1 Aircraft applications -- 3.1.5.2 Spacecraft applications -- 3.1.5.3 Military applications -- 3.1.5.4 Remote sensing applications -- 3.1.6 Performance characteristics -- 3.2 Pulse radar altimeters -- 3.2.1 Principle of operation -- 3.2.2 Pulse duration -- 3.2.3 Tracking altimeters -- 3.2.4 Design principles -- 3.2.5 Features of altimeters with pulse compression -- 3.2.6 Pulse laser altimetry -- 3.2.7 Some examples -- 3.2.8 Validation -- 3.2.9 Future trends -- 3.3 Continuous wave radar altimeters -- 3.3.1 Principles of continuous wave radar -- 3.3.2 FMCW radar waveforms -- 3.3.3 Design principles and structural features -- 3.3.3.1 Local oscillator automatic tuning -- 3.3.3.2 Single-sideband receiver structure -- 3.3.4 The Doppler effect -- 3.3.5 Alternative measuring devices for FMCW altimeters -- 3.3.6 Accuracy and unambiguous altitude -- 3.3.7 Aviation applications -- 3.4 Phase precise radar altimeters -- 3.4.1 The phase method of range measurement -- 3.4.2 The two-frequency phase method -- 3.4.3 Ambiguity and accuracy in the two-frequency method -- 3.4.4 Phase ambiguity resolution -- 3.4.5 Waveforms -- 3.4.6 Measuring devices and signal processing -- 3.4.7 Remarks on the accuracy of CW and pulse radar altimeters -- 3.5 Radioactive altimeters for space application -- 3.5.1 Motivation and history -- 3.5.2 Physical bases -- 3.5.2.1 Features of radiation -- 3.5.2.2 Generators of photon emission -- 3.5.2.3 Receivers -- 3.5.2.4 Propagation features -- 3.5.3 Principles of operation -- 3.5.4 Radiation dosage -- 3.5.5 Examples of radioisotope altimeters -- References --

4. Autonomous radio sensors for motion parameters -- 4.1 Introduction -- 4.2 Doppler sensors for ground speed and crab angle -- 4.2.1 Physical basis and functions -- 4.2.2 Principle of operation -- 4.2.3 Classification and features of sensors for ground speed and crab angle -- 4.2.4 Generalized structural diagram for the ground speed and crab angle meter -- 4.2.5 Design principles -- 4.2.6 Sources of Doppler radar errors -- 4.2.7 Examples -- 4.3 Airborne weather sensors -- 4.3.1 Weather radar as mandatory equipment of airliners and transport aircraft -- 4.3.2 Multifunctionality of airborne weather radar -- 4.3.3 Meteorological functions of AWR -- 4.3.4 Principles of

DWP detection with AWR -- 4.3.4.1 Developing methods of DWP detection -- 4.3.4.2 Cumulonimbus clouds and heavy rain -- 4.3.4.3 Turbulence detection -- 4.3.4.4 Wind shear detection -- 4.3.4.5 Hail zone detection -- 4.3.4.6 Probable icing-in-flight zone detection -- 4.3.5 Surface mapping -- 4.3.5.1 Comparison of radar and visual orientation -- 4.3.5.2 The surface-mapping principle -- 4.3.5.3 Reflecting behavior of the earth's surface -- 4.3.5.4 The radar equation and signal correction -- 4.3.5.5 Automatic classification of navigational landmarks -- 4.3.6 AWR design principles -- 4.3.6.1 The operating principle and typical structure of AWR -- 4.3.6.2 AWR structures -- 4.3.6.3 Performance characteristics: basic requirements -- 4.3.7 AWR examples -- 4.3.8 Lightning sensor systems: stormscopes -- 4.3.9 Optical radar -- 4.3.9.1 Doppler lidar -- 4.3.9.2 Infrared locators and radiometers -- 4.3.10 The integrated localization of dangerous phenomena -- 4.4 Collision avoidance sensors -- 4.4.1 Traffic alert and collision avoidance systems (TCAS) -- 4.4.1.1 The purpose -- 4.4.1.2 A short history -- 4.4.1.3 TCAS levels of capability -- 4.4.1.4 TCAS concepts and principles of operation -- 4.4.1.5 Basic components -- 4.4.1.6 Operation -- 4.4.1.7 TCAS logistics -- 4.4.1.8 Cockpit presentation -- 4.4.1.9 Examples of system implementation -- 4.4.2 The ground proximity warning system (GPWS) -- 4.4.2.1 Purpose and necessity -- 4.4.2.2 GPWS history, principles, and evolution -- 4.4.2.3 GPWS modes -- 4.4.2.4 Shortcomings of classical GPWS -- 4.4.2.5 Enhanced GPWS -- 4.4.2.6 Look-ahead warnings -- 4.4.2.7 Implementation examples -- References --

5. Devices and sensors for linear acceleration measurement -- 5.1 Introduction -- 5.2 Types of accelerometers -- 5.2.1 Linear and pendulous accelerometers -- 5.2.2 Direct conversion accelerometers and compensating accelerometers -- 5.2.2.1 Direct conversion accelerometers -- 5.2.2.2 Compensating accelerometers -- 5.3 Accelerometer parameters -- 5.3.1 Acceleration measurement range a_{max} -- 5.3.2 Resolution a_{min} -- 5.3.3 Zero signal (bias) a_0 -- 5.3.4 Scale factor K_a -- 5.3.5 Biasing error (misalignment) -- 5.3.6 Accelerometer frequency characteristics -- 5.3.7 Special accelerometer parameters -- 5.3.7.1 Magnetic leakage -- 5.3.7.2 Electromagnetic noise -- 5.3.7.3 Readiness time -- 5.3.7.4 Noise level in the accelerometer output -- 5.3.7.5 Sensitivity to external constant and variable magnetic fields -- 5.3.7.6 Sensitivity to changes in power supply voltage -- 5.3.7.7 Sensitivity to external pressure, humidity, and radiation -- 5.4 Float pendulous accelerometer (FPA) -- 5.4.1 Basic EMU design schemes -- 5.4.1.1 Advantages -- 5.4.1.2 Disadvantages -- 5.4.2 Hydrostatic accelerometer suspensions -- 5.4.3 FPA float balancing -- 5.4.4 Hydrodynamic forces and moments in the FPA -- 5.4.5 Movement of FPA float under vibration -- 5.5 Micromechanical accelerometers (MMAS) -- 5.5.1 The single-axis MMA -- 5.5.2 The three-axis MMA -- 5.5.3 The compensating type MMA -- 5.5.4 Solid-state MMA manufacturing techniques -- References --

6. Gyroscopic devices and sensors -- 6.1 Introduction -- 6.1.1 Preliminary remarks -- 6.1.2 Classification of gyros -- 6.1.3 Gyroscopic instruments -- 6.1.4 Positional gyros -- 6.1.5 The vertical (or horizontal) gyro -- 6.1.6 Orbit gyro -- 6.1.7 Single degree of freedom (SDF) gyros -- 6.1.8 Gyro stabilizers -- 6.1.9 Gyroscopic instruments in aeronavigation -- 6.1.10 Inertial navigation systems (INS) -- 6.1.10.1 Types of INS -- 6.1.10.2 Strapdown INS -- 6.1.11 The scope of gyros and gyro instruments of various types -- 6.2 Single degree of freedom (SDF) gyros -- 6.2.1 The solid rotor SDF gyro -- 6.2.2 The integrating gyro -- 6.2.3 Rate of speed gauging -- 6.2.3.1 Feedback contours of the angular rate gauge -- 6.2.3.2 Design variants

-- 6.3 The TDF gyro in gimbal mountings -- 6.3.1 Properties of a free gyro -- 6.3.2 Areas of application, design features, and error sources -- 6.3.3 Two-component angular speed measuring instruments -- 6.4 The gyroscopic integrator for linear acceleration (GILA) -- 6.4.1 Principles of GILA operation -- 6.4.2 Sources of GILA errors -- 6.5 Contactless suspension gyros -- 6.5.1 Introduction -- 6.5.2 The electrostatic gyroscope (ESG) -- 6.5.2.1 ESG accuracy -- 6.5.2.2 The ESG rotor -- 6.5.2.3 The rotor electrostatic suspension -- 6.5.2.4 Angular rotor position readout -- 6.5.3 Conclusion -- 6.6 The fiber optic gyro (FOG) -- 6.6.1 The interferometric fiber optic gyro (IFOG) -- 6.6.1.1 The basic IFOG scheme and the Sagnac effect -- 6.6.1.2 Open-loop operation -- 6.6.1.3 Closed-loop operation -- 6.6.1.4 Fundamental limitations -- 6.6.1.5 The multiple-axis IFOG -- 6.6.1.6 The depolarized IFOG -- 6.6.1.7 Applications of the IFOG -- 6.6.2 The resonator fiber optic gyro (RFOG) -- 6.7 The ring laser gyro (RLG) -- 6.7.1 Introduction -- 6.7.2 Principle of operation -- 6.7.3 Frequency characteristics and mode-locking counter-rotating waves -- 6.7.4 The elimination of mode-locking in counter-rotating waves -- 6.7.5 Errors -- 6.7.6 Performance and application -- 6.7.7 Conclusion -- 6.8 Dynamically tuned gyros (DTG) -- 6.8.1 Introduction -- 6.8.2 Key diagrams and dynamic tuning -- 6.8.3 Operating modes -- 6.8.4 Disturbance moments depending on external factors and instrumental errors -- 6.8.5 Magnetic, aerodynamic, and thermal disturbance moments -- 6.8.6 Design, application, technical characteristics -- 6.8.7 Conclusion -- 6.9 Solid vibrating gyros -- 6.9.1 Introduction -- 6.9.2 Dynamic behavior of the ideal solid vibrating gyro -- 6.9.3 Operating modes of the solid vibrating gyro -- 6.9.4 The nonideal solid vibrating gyro -- 6.9.5 Control of the solid vibrating gyro -- 6.9.6 Axisymmetric-shell gyros -- 6.9.7 The HRG, history and current status -- 6.9.8 HRG design characteristics -- 6.9.9 Additional HRG references -- 6.10 Micromechanical gyros -- 6.10.1 Introduction -- 6.10.2 Operating principles -- 6.10.2.1 Linear-linear (LL-type) gyros -- 6.10.2.2 Rotary-rotary (RR-type) gyro principles -- 6.10.2.3 Fork and rod gyro principles -- 6.10.2.4 Ring gyro principles -- 6.10.3 Adjustment of oscillation modes in gyros of the LL and RR types -- 6.10.4 Design, application, and performance -- 6.10.4.1 Gyros of the LL and RR-type -- 6.10.4.2 Fork and rod gyros -- 6.10.4.3 Ring gyros -- 6.10.5 Conclusion -- References --

7. Compasses -- 7.1 Introduction -- 7.2 Magnetic compasses -- 7.2.1 Brief historical sketch -- 7.2.2 The earth's magnetic field -- 7.2.3 Magnetic compass design principles and errors -- 7.2.4 Examples of magnetic compasses structures -- 7.3 Fluxgate and gyro-magnetic compasses -- 7.3.1 Fluxgate and gyro-magnetic compasses design principles -- 7.3.2 Examples of fluxgate and gyro-magnetic structures -- 7.4 Electronic compasses -- References --

8. Propulsion sensors -- 8.1 Introduction -- 8.2 Fuel quantity sensors -- 8.2.1 Mechanical and electromechanical methods of level sensing -- 8.2.1.1 Buoyancy or float methods -- 8.2.1.2 Level sensing using pressure transducers -- 8.2.2 Electronic methods of level sensing -- 8.2.2.1 Conductivity level sensing -- 8.2.2.2 Capacitive level sensing -- 8.2.2.3 Heat-transfer level sensing -- 8.2.2.4 Ultrasonic methods -- 8.3 Fuel consumption sensors -- 8.3.1 Introduction -- 8.3.2 Flow-obstruction methods -- 8.3.2.1 Practical considerations for obstruction meters -- 8.3.3 The turbine flow meter -- 8.3.4 The vane-type flow meter -- 8.4 Pressure sensors -- 8.4.1 Basic concepts -- 8.4.2 Basic sensing methods -- 8.4.2.1 The diaphragm -- 8.4.2.2 Capsules -- 8.4.2.3 The bourdon tube -- 8.4.3 Signal acquisition -- 8.4.3.1 Capacitive deflection transducers -- 8.4.3.2 Inductive deflection

transducers -- 8.4.3.3 Potentiometric deflection transducers -- 8.4.3.4 Null-balance servo pressure transducers -- 8.4.4 Operational requirements -- 8.5 Engine temperatures -- 8.5.1 Intermediate turbine temperature (ITT) -- 8.5.2 Oil temperature/fuel temperature -- 8.5.3 Fire sensors -- 8.5.4 Exhaust gas temperature (EGT) -- 8.5.5 Nacelle temperature -- 8.6 Tachometry -- 8.6.1 The eddy current tachometer -- 8.6.2 The AC generator tachometer -- 8.6.3 The variable reluctance tachometer -- 8.6.4 The Hall effect tachometer -- 8.7 Vibration sensors, engine and nacelle -- 8.8 Regulatory issues -- References -- Bibliography --

9. Principles and examples of sensor integration -- 9.1 Sensor systems -- 9.1.1 The sensor system concept -- 9.1.2 Joint processing of readings from identical sensors -- 9.1.3 Joint processing of readings from cognate sensors with different measurement ranges -- 9.1.4 Joint processing of diverse sensors readings -- 9.1.5 Linear and nonlinear sensor integration algorithms -- 9.2 Fundamentals of integrated measuring system synthesis -- 9.2.1 Synthesis problem statement -- 9.2.2 Classes of dynamic system realization -- 9.2.3 Measurement accuracy indices -- 9.2.4 Excitation properties -- 9.2.5 Objective functions for robust system optimisation -- 9.2.6 Methods of dynamic system accuracy index analysis under excitation with given numerical characteristics of derivatives -- 9.2.6.1 Estimation of error variance -- 9.2.6.2 Example of error variance analysis -- 9.2.6.3 Use of equivalent harmonic excitation -- 9.2.6.4 Estimation of error maximal value -- 9.2.7 System optimization under maximum accuracy criteria -- 9.2.8 Procedures for the dimensional reduction of a measuring system -- 9.2.8.1 Determination of an optimal set of sensors -- 9.2.8.2 Analysis of the advantages of invariant system construction -- 9.2.8.3 Advantages of the zeroing of several system parameters -- 9.2.9 Realization and simulation of integration algorithms -- 9.3 Examples of two-component integrated navigation systems -- 9.3.1 Noninvariant robust integrated speed meter -- 9.3.2 Integrated radio-inertial measurement -- 9.3.3 Airborne gravimeter integration -- 9.3.4 The orbital verticant -- References -- Epilogue -- Index.

Sommario/riassunto

The present series is concerned with sensors per se, and because the subject matter is so wide-ranging in both scope and maturity, this must be reflected within the individual volumes. So, whereas care has been taken to include a considerable amount of practical material, the proportion of such leavening is inevitably variable. The present volume will be found to include material on the basic processes that are addressed by the sensors used in most aspects of aerospace technology, plus considerable detail on the relevant sensors themselves and their applications. In the context of aerospace engineering, however, there are many items of complex equipment--mostly radio and navigationally oriented--that can be considered as sensors in their own right. This situation has been addressed in a companion volume that is in production at the time of writing, and will act as an adjunct to the present work.

3. Record Nr.	UNINA990005284290403321
Autore	Soggin, J. Alberto
Titolo	I manoscritti del Mar Morto / J. Alberto Soggin ; presentazione di Sabatino Moscati
Pubbl/distr/stampa	Roma, : Newton Compton, c.1978
Descrizione fisica	205 p., 16 tav. ; 20 cm
Collana	Paperbacks civiltà scomparse ; 22
Disciplina	296.155
Locazione	FLFBC
Collocazione	199.4 SOGA 01
Lingua di pubblicazione	Italiano
Formato	Materiale a stampa
Livello bibliografico	Monografia