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Problems; Chapter 5 Inertial Accelerations; 5.1 General; 5.2 Inertial Acceleration of a Point; 5.2.1 Arbitrary moving reference frame; 5.2.2 Earth-centered moving reference frame; 5.2.3 Earth-fixed moving reference frame; 5.3 Inertial Acceleration of a Mass; 5.3.1 Linear acceleration; 5.3.2 Rotational acceleration; 5.4 States; 5.5 Customs and Conventions; 5.5.1 Linear velocity components; 5.5.2 Angular velocity components; 5.5.3 Forces; 5.5.4 Moments; 5.5.5 Groupings; Problems; Chapter 6 Forces and Moments; 6.1 General; 6.1.1 Assumptions; 6.1.2 State variables
6.1.3 State rates
6.1.4 Flight controls; 6.1.5 Independent variables; 6.2 Non-Dimensionalization; 6.3 Non-Dimensional Coefficient Dependencies; 6.3.1 General; 6.3.2 Altitude dependencies; 6.3.3 Velocity dependencies; 6.3.4 Angle-of-attack dependencies; 6.3.5 Sideslip dependencies; 6.3.6 Angular velocity dependencies; 6.3.7 Control dependencies; 6.3.8 Summary of dependencies; 6.4 The Linear Assumption; 6.5 Tabular Data; 6.6 Customs and Conventions; Problems; Chapter 7 Equations of Motion; 7.1 General; 7.2 Body-Axis Equations; 7.2.1 Body-axis force equations; 7.2.2 Body-axis moment equations
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8.6 Customs and Conventions

Sommario/riassunto

Aircraft Flight Dynamics and Control addresses airplane flight dynamics and control in a largely classical manner, but with references to modern treatment throughout. Classical feedback control methods are illustrated with relevant examples, and current trends in control are presented by introductions to dynamic inversion and control allocation. This book covers the physical and mathematical fundamentals of aircraft flight dynamics as well as more advanced theory enabling a better insight into nonlinear dynamics. This leads to a useful introduction to automatic flight control and stab
