Aircraft Dynamics: From Modeling to Simulation
Marcello R. Napolitano

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■ DESCRIPTION

The 1st edition of Aircraft Dynamics: from Modeling to Simulation by Marcello R. Napolitano is an innovative textbook with specific features for assisting, motivating and engaging aeronautical/aerospace engineering students in the challenging task of understanding the basic principles of aircraft dynamics and the necessary skills for the modeling of the aerodynamic and thrust forces and moments.

Additionally the textbook provides a detailed introduction to the development of simple but very effective simulation environments for today demanding students as well as professionals. The book contains an abundance of real life students sample problems and problems along with very useful Matlab® codes.

■ ABOUT THE AUTHOR

Marcello Napolitano is a Professor of Mechanical and Aerospace Engineering at West Virginia University, and has received numerous teaching, research and professional awards, including 11 teaching awards, 4 research awards and the NASA Outstanding Service Achievement Award. He is recognized as an authority on the subject of Aircraft Dynamics.

■ RELATED RESOURCES

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FEATURES

• Strong emphasis on 'high level' synthesis following detailed description of the key concepts of the discipline (aircraft equations of motion, modeling of aerodynamic forces and moments, and solution of the aircraft dynamics). See charts in Chapter 1, 3, 4, and 7.

• Critical chapter dedicated to the critical skills of developing a Matlab®/Simulink based simulation environment for realistic aircraft dynamic simulations. See Chapter 9.

• Powerful 'one-of-a-kind' database (Appendix C) of detailed CAD drawings for 25 aircraft - representing virtually all the classes of aircraft – along with all the associated geometric data ideal for estimating all the aerodynamic coefficients. For a number of these aircraft comparisons of the above estimates with the true values in Appendix B.

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