

# Book Announcements

**RIMROTT, F. J. P.**, *Introductory Attitude Dynamics*, Springer-Verlag, New York, 1988, 336 pages, \$45.00.

**Purpose:** This book deals with the fundamentals of gyro dynamics. Particular attention is paid to the attitude motion of torque-free single and double spinners, and the new collinearity theorems are introduced to predict attitude stability and drift.

**Contents:** Stability of satellite attitude in a central force field; torque-free gyros; deformable axisymmetric gyros; secular attitude drift of a torque-free dissipative axisymmetric gyro; rigid gyrostats; torque-free dissipative axisymmetric gyrostats.

**ROBERSON, R. E. and SCHWERTASSEK, R.**, *Dynamics of Multibody Systems*, Springer-Verlag, New York, 1988, 245 pages, \$59.00.

**Purpose:** This book addresses the general problem of analyzing the behavior of multibody systems by digital simulation. It also develops the algorithms for deriving the descriptive equations based on simple user-provided data about the topology of the system model and the mechanical properties of the bodies and their interconnections.

**Contents:** Kinematics of a rigid body; dynamics of a rigid body; multibody systems; linearized equations; computer simulation.

**D'SOUZA, A. F.**, Illinois Institute of Technology, *Design of Control Systems*, Prentice-Hall, Englewood Cliffs, NJ, 1988, 393 pages.

**Purpose:** This book presents the fundamentals of control design for linear, constant-parameter systems.

**Contents:** Mathematical modeling of control system components and control systems; transient response; frequency response; stability and root locus; output feedback; state feedback; digital control.

**HALE, F. J.**, North Carolina State University, *Introduction to Control System Analysis and Design* (2nd ed.), Prentice-Hall, Englewood Cliffs, NJ, 1988, 335 pages.

**Purpose:** This book presents an introduction to dynamic analysis and control of linear systems.

**Contents:** Linearization and Laplace transforms; modeling and transfer functions; stability and time response; steady state; root locus; Nyquist and Bode plots; compensation and controller design; nonlinear control systems; introduction to modern control theory; digital control systems.

**CRAIG, J. J.**, Silma, Inc., *Introduction to Robotics: Mechanics and Control*, Addison-Wesley, Reading, MA, 1986, 303 pages.

**Purpose:** This book treats mechanics and control aspects of manipulators in depth.

**Contents:** Spatial descriptions and transformations; manipulator kinematics; inverse manipulator kinematics; Jacobians, velocities, and static forces; manipulator dynamics; trajectory generation; position control; force control; robot programming languages and systems.

**CRAIG, J. J.**, Silma, Inc., *Adaptive Control of Mechanical Manipulators*, Addison-Wesley, Reading, MA, 1988, 136 pages.

**Purpose:** This book investigates the robustness of the model-based servo in the presence of poorly known parameters and develops a sufficient condition for stability of the overall system in the presence of parameter errors. It also develops a parameter-adaptive control scheme.

**Contents:** Control of mechanical manipulators; robustness of model based control of manipulators; adaptive control and learning control of manipulators; conclusions; appendices.

## Erratum

### Minimum Model Error Estimation for Poorly Modeled Dynamic Systems

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[JGCD, pp. 256-261 (1988)]

**A**N error was inadvertently introduced into Eq. (5) during production of the paper. The correct equation should appear as follows:

p. 257:

$$\dot{x} = f[x(t), t] + d(t) \quad (5)$$