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- G05-158 Robust Antiwindup for Manual Flight Control of an Unstable Aircraft. Giulio Avanzini, *Politecnico di Torino, Italy*; and Sergio Galeani, *Università di Roma "Tor Vergata," Italy* (28, 6, p. 1275) Article

- **G05-159 Optimization of Spacecraft Thruster Management Function.** Finn Ankersen and Shu-Fan Wu, *European Space Research and Technology Center of European Space Agency, The Netherlands*; Alexander Aleshin, Alexander Vankov, and Vladimir Volochinov, *D-3-Group GmbH, Germany* (**28**, 6, p. 1283) Article based on AIAA Paper 2004-5133
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- G05-161 Analytical Solutions for Thrusting, Spinning Spacecraft Subject to Constant Forces. James M. Longuski, Purdue University; R. A. Gick, The Aerospace Corporation; Mohammad A. Ayoubi, Purdue University; and Laura A. Randall, Space Systems/Loral (28, 6, p. 1301) Article
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## **Books Reviewed During 2005**

**Optimal Control Theory for Applications,** by David G. Hull, *Springer-Verlag* (Vol. 28, No. 1, p. 191); reviewed by John E. Prussing

Marine Control Systems: Guidance, Navigation, and Control of Ships, Rigs and Underwater Vehicles, by Thor I. Fossen, *Marine Cybernetics* (Vol 28, No. 3, p. 574); reviewed by Craig A. Woolsey