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## 2002-2003 Monthly Seminar Series on Space Research

Fall Quarter

# **ATTITUDE DYNAMICS AND CONTROL OF FLEXIBLE SPACECRAFT**

**Professor Brij N. Agrawal**

Department of Aeronautics and Astronautics  
Naval Postgraduate School, Monterey

Date: Thursday October 24, 2002    Time: 2:10-3:00 pm    Location: 1065 Engineering II  
Refreshments will be provided at 2:00 p.m.

### ABSTRACT

This seminar presents an overview of the research on attitude dynamics and control of spacecraft at the Spacecraft Research and Design Center at NPS. The topics to be covered will include slew maneuver of flexible spacecraft, smart structures, vibration isolation, and fine pointing of imaging payloads. The presentation will include both analytical and experimental work. The emphasis in the presentation will be on the acquisition, tracking, and pointing of relay mirror spacecraft. The spacecraft consists of two large space telescopes optically connected, receive telescope to receive the laser beam and the transmit telescope to transmit the laser beam. It requires the jitter to be less than 144 nanorad. The current test bed and future test bed under development will be discussed. It is a very challenging problem for multi-body dynamics, controls, optics, and structures interaction. For additional information visit the web site <http://www.aa.nps.navy.mil/~agrawal/srdc/>.

### ABOUT THE SPEAKER

Dr. Brij Agrawal is currently Professor and Associate Chairman in the Department of Astronautics and Director of Spacecraft Research and Design Center at the Naval Postgraduate School (NPS). He received his Ph.D. degree in Mechanical Engineering from Syracuse University. At NPS he has developed research programs in computer aided spacecraft design, Attitude control of flexible spacecraft, "Smart" sensors and structures, and space robotics, and acquisition, tracking, and pointing of relay mirror spacecraft. Before joining NPS in 1989, he worked for twenty years for communication Satellite Corporation (COMSAT) and International Telecommunications Satellite Organization (INTELSAT) where he conducted research in spacecraft attitude control, spacecraft structures, spacecraft system designs, and spacecraft testing. He has published 1 book and over 80 technical papers.

**For more information about SpaceED program or the seminars please contact  
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Members of the campus community and visitors from the region are welcome to attend the seminar series. Sign-in is required at the event. SpaceED seminar will replace MAE297 seminar on 3<sup>rd</sup> Thursdays.

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