In this seminar, there will be an overview of our research on autonomous aerospace systems, with particular attention to the design of the underlying control and motion planning algorithms using quaternions, dual quaternions, and convex optimization. Applications of such an approach to missions such as constrained attitude control, proximity operations, planetary landing, and asteroid capture will then be discussed. In the second part of the seminar, some of our group’s research on networked aerospace systems will be presented, highlighting the challenges in the design of distributed algorithms for their autonomous or semi-autonomous operation.

On behalf of Professor Ran Dai, Meet our latest speaker:

Professor Mehran Mesbahi
University of Washington, Seattle, Washington

Mehran Mesbahi received his Ph.D. from the USC in 1996. He was a member of the Guidance, Navigation, and Analysis group at JPL from 1996-2000 and an Assistant Professor of Aerospace Engineering and Mechanics at the University of Minnesota from 2000-2002. He is currently a Professor of Aeronautics and Astronautics, Adjunct Professor of Mathematics, and Executive Director of Joint Center for Aerospace Technology Innovation at the University of Washington. He is a Fellow of IEEE and the recipient of NSF CAREER Award, NASA Space Act Award, UW Distinguished Teaching Award, and UW College of Engineering Innovator Award. His research interest is autonomous and networked aerospace systems.