The Fall 2016 Colloquium Series Presents

“Aircraft Engine Advanced Controls Research under NASA Aeronautics Research Mission Programs”

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Abstract
The Intelligent Control and Autonomy Branch (ICAB) at NASA (National Aeronautics and Space Administration) Glenn Research Center (GRC) in Cleveland, Ohio, is leading and participating in various projects in partnership with other organizations within GRC and across NASA, the U.S. aerospace industry, and academia to develop advanced controls and health management technologies that will help meet the goals of the NASA Aeronautics Research Mission Directorate (ARMD) Programs. These efforts are primarily under the various projects of the Advanced Air Vehicles Program (AAVP), Airspace Operations and Safety Program (AOSP) and Transformative Aeronautics Concepts Program (TAC). The ICAB is focused on advancing the state-of-the-art of aero-engine control and diagnostics technologies to help improve aviation safety, increase efficiency, and enable operation with reduced emissions. This presentation describes the various ICAB research efforts under the NASA Aeronautics Research Mission Programs with a summary of motivation, background, technical approach, and recent accomplishments for each of the research tasks.

Bio
Dr. Sanjay Garg received his Ph.D. from Purdue University, M.Sc. from University of Minnesota, and B.Tech from Indian Institute of Technology, Kanpur, India, all in Aerospace Engineering. He has worked as a controls engineer at NASA Glenn Research Center (GRC) since 1988 and is currently Chief of the Intelligent Control and Autonomy Branch. He is responsible for the development of advanced dynamic modeling, health management, and control design and implementation technologies for current and future aerospace propulsion systems. He supervises a group of 26 engineers conducting research in support of NASA Aeronautics Research and Space Exploration programs. Dr. Garg is internationally recognized for research contributions in application of multivariable control technologies to aerospace vehicles, and for leadership in application of Intelligent System technologies to propulsion systems. He has authored over 80 technical papers and has presented graduate seminars at various universities. Dr. Garg is a recipient of the NASA Medal for Exceptional Achievement, NASA Medal for Exceptional Service, and a NASA fellowship for the Program for Management Development at Harvard Business School. He has also completed the NASA Senior Executive Service Candidate Development program. Dr. Garg is an Associate Fellow of AIAA (American Institute of Aeronautics and Astronautics) and served for 2 years on the AIAA Board of Directors as Director – Technical, Information Systems Group. He received the AIAA Sustained Service Award in 2016.