May 2020

Rock River Valley Section
www.ieee.org/rrvs

Event Sense

The Institute of Electrical and Electronic Engineers, Inc.

IEEE RRV Section, Joint Computer and Control Systems Chapter Meeting

SERVING IEEE MEMBERS OF NORTH CENTRAL ILLINOIS AND SOUTH CENTRAL WISCONSIN

WHEN Thursday, May 28, 2020

WHERE **Webex**
https://ieeemeetings.webex.com/ieeemeetings/j.php?MTID=m18560b110f2da16a8439b71357c722d3

Meeting number (access code): 596 545 816
Meeting password: RRVIEEEACCSMTG

AGENDA
7:00 PM Dial in
7:15 PM Introductions
7:30 PM Presentation

Hierarchical Approach to Control of Complex Energy and Power Systems for Air Vehicles

Dr. Andrew Alleyne, IEEE Control Systems Society Distinguished Lecturer

Modern aircraft are highly complex systems. This talk will present a particular hierarchical approach to energy and power flow in air vehicles that accommodates multiple power modes. These modes include thermal, fluid, electrical, or mechanical since these are all available in larger aircraft. In particular, with the current drive towards increased electrification, the management of power onboard aircraft has become an enabler or a bottleneck depending on the point of view. A key challenge in working across various modes of power flow is the widely varying time scales. The hierarchy allows for systems operating on different time scales to be coordinated in a controllable manner. It also allows for different dynamic decision-making tools to be used at different levels of the hierarchy based on the needs of the physical systems under control. Additional advantages include the modularity and scalability inherent in the hierarchy. Additional modules can be added or removed without changing the basic approach. In addition to the hierarchical control, a particularly useful graph-based approach will be introduced for the purpose of modeling the system interactions. The graph approach, like the hierarchy, has benefits of modularity and scalability along with being an efficient framework for representing systems of different time scales. Recent results will be presented representing both generic interconnected complex systems as well as specific examples and resulting benefits.

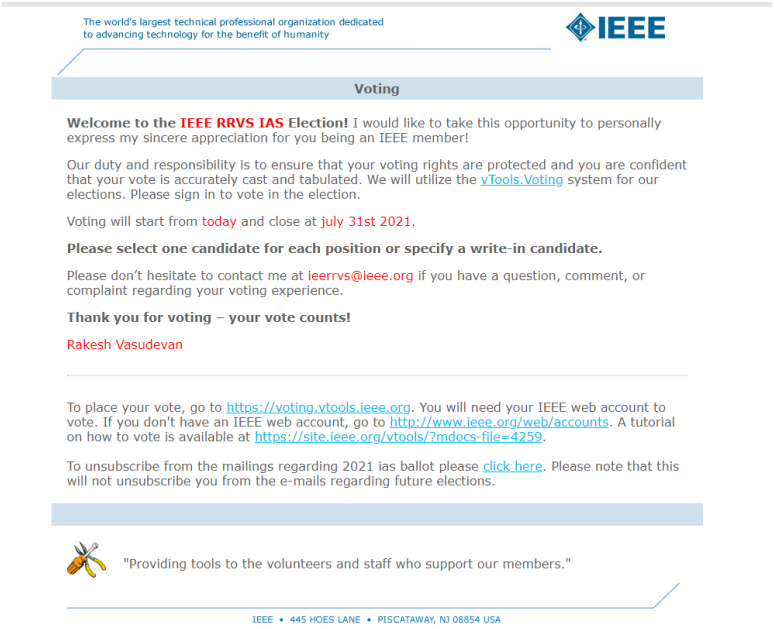
Professor Andrew Alleyne received a B.S. Degree from Princeton in 1989 and his M.S. and Ph.D. degrees in 1992 and 1994, respectively, from U.C. Berkeley. He joined the University of Illinois, Urbana-Champaign in 1994 where he holds the Ralph & Catherine Fisher Professorship and is the Director of the NSF ERC on Power Optimization for Electro Thermal Systems (POETS). He is appointed in Mechanical Science & Engineering, Electrical & Computer Engineering as well as the Coordinated Science Laboratory. A Fulbright fellow, he has held visiting appointments at TU Delft, University of Colorado, Johannes Kepler University, and ETHZ. He is a recipient of the Gustus Larson Award and Henry Paynter Award from ASME. His research interests are a mix of theory and implementation with a broad application focus.

Event number (access code): 596 545 816
Meeting password: RRVIEEEACCSMTG
https://ieeemeetings.webex.com/ieeemeetings/j.php?MTID=m18560b110f2da16a8439b71357c722d3

Please register **online at**
https://meetings.vtools.ieee.org/m/230383
or by emailing Diane Sennebogen at diane.brock@utas.utc.com by Thursday, May 28 at 1 pm. Please include the following: name, phone number, email address, and IEEE member number. The meeting is open to the general public.

Section News:

June 2020 Picnic is postponed till later date. As a result, the Section election will be conducted via online voting. Section members may be receiving multiple emails (one for section election and another for chapter election) similar to the one below from ou-evoting@ieee.org. Please take time and vote online! The ballot will ***close on July 31, 2020*** (not 2021!)



The world's largest technical professional organization dedicated to advancing technology for the benefit of humanity

IEEE

Voting

Welcome to the IEEE RRVS IAS Election! I would like to take this opportunity to personally express my sincere appreciation for you being an IEEE member!

Our duty and responsibility is to ensure that your voting rights are protected and you are confident that your vote is accurately cast and tabulated. We will utilize the vTools.Voting system for our elections. Please sign in to vote in the election.

Voting will start from today and close at july 31st 2021.

Please select one candidate for each position or specify a write-in candidate.

Please don't hesitate to contact me at ieerrvs@ieee.org if you have a question, comment, or complaint regarding your voting experience.

Thank you for voting – your vote counts!

Rakesh Vasudevan

To place your vote, go to https://voting.vtools.ieee.org. You will need your IEEE web account to vote. If you don't have an IEEE web account, go to http://www.ieee.org/web/accounts. A tutorial on how to vote is available at https://site.ieee.org/vtools/?mdocs-file=4259.

To unsubscribe from the mailings regarding 2021 ias ballot please click here. Please note that this will not unsubscribe you from the e-mails regarding future elections.

"Providing tools to the volunteers and staff who support our members."

IEEE • 445 HOES LANE • PISCATAWAY, NJ 08854 USA