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Special Session: *Autonomous Sensing, Planning, and Control for Intelligent Unmanned Systems*

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Bio: Mingyang Xie received the Ph.D. degree in Robotics and Automation from the City University of Hong Kong in 2016. He has been with Nanjing University of Aeronautics and Astronautics since 2017 where he is now Assistant Professor of Automation Engineering. His current research interests include UAV flight control, unmanned system autonomous control, robot control, intelligent control. Dr. Xie is an IEEE Senior member, an associate editor of *International Journal of Aerospace System Science and Engineering*, and also served as a reviewer for *IEEE Transactions on Robotics*, *IEEE Transactions on Industrial Electronics*, *IEEE/ASME Transactions on Mechatronics*, *IEEE Transactions on Systems, Man, and Cybernetics, Part A*, *International Journal of Robust and Nonlinear Control*, *ICRA*, *IROS*, *Robio*, *AIM*, etc..

Abstract: Autonomous control technology of intelligent unmanned systems is a hot topic due to its significance in theory research and practice application. As the mature application of unmanned aerial vehicles (UAVs), unmanned ground vehicles (UGVs), unmanned surface vehicles (USVs), robots and other unmanned systems in military and civilian fields, the improvement of autonomous capability of intelligent unmanned systems has received increasing attention. This session aims to explore and discuss the new development of autonomous control technology for intelligent unmanned systems with experts, scholars and engineers in related research fields. New ideas and contributions of autonomous control technology for intelligent unmanned system will be demonstrated and shared at the same time.

Topics include, but are not limited to:

- 1) Advanced navigation, guidance and control technology for unmanned aerial vehicle;
- 2) Development trends and innovative applications of autonomous control technology for intelligent unmanned systems;
- 3) New methods for autonomous sensing, planning, decision-making and control based on artificial intelligence for unmanned systems;
- 4) Multi-unmanned system cooperative control theory and application;
- 5) Fault Detection and tolerant control for unmanned systems.