

Keynote II

Why Control and Biology Now? : From Cells to Brain

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ABSTRACT: Control is a fundamental function of living systems that is ubiquitous in every aspect of the life, ranging from cell substances homeostasis to brain motor control. The architectures and algorithms of control in each level of living systems seem to be diverse, but it is natural to think that there is a unified principle of control that has been developed in various ways through the long history of evolution of life. This talk will present some fundamental issues of biological control systems that need control theory for precise formulations and further developments in the light of evolution of control of living systems.

Biography: Professor Hidenori Kimura was graduated from the Department of Mathematical Engineering, The University of Tokyo in 1965. He got the Degree of Engineering from the University of Tokyo in 1970. He joined the Faculty of Engineering Science, Osaka University in 1970 where he engaged in the research and education of control theory and its applications, signal processing, and modeling theory. Meantime, he stayed in United Kingdom during 1974-75 for 15 months supported by British Council. In 1995, He was invited to be a Guest Professor of the Delft University of Science and Technology in the Netherland and in 1996 he was appointed to be a Springer Professor at the University of California Berkley. In 1996, He joined the Faculty of Engineering, The University of Tokyo, where he is currently a professor of control engineering. He is also a leader of a Research Team on Biological Control Systems of RIKEN (the largest research institute for scientific study in Japan). He is an author of about 200 technical papers and gave more than 30 invited presentations.

He was awarded a number of awards. To name a few, Automatica Paper Prize Awards in 1984 and 1990 from the International Federation of Automatic Control, the George Axel by Award in 1984 and Distinguished Membership Award in 1996 from the IEEE Control Systems Society. Also, he was the recipient of SICE (The Society of Instrument and Control Engineers) Paper Awards four times. Since 1990, he has been a Fellow of IEEE. He served as the General Chair of the IEEE Conference on Decision and Control in 1996. He is a Managing Editor of Asian Journal of Control, and now the President of the SICE.