

SEMINAR

Group: Engineering Fluid Dynamics

During his visit of our Group Engineering Fluid Dynamics

Prof. Kozo Fujii
Tokyo University of Science – ISAS/JAXA, Japan

will give a presentation, entitled:

Recent Findings on the Mechanism of Flow Separation Control by Small Devices

You are cordially invited!

Date: Wednesday September 23, 2015

Time: 10:45

Room: Horst Building HT-500A

Summary:

Recent small devices (such as DBD plasma actuators and synthetic jets) have been shown to be very effective for flow separation control at stall angles. The author's group at the ISAS/JAXA has been conducting both experimental and computational studies in the past 10 years. The talk focuses mainly on the recent research activities. The effort with numbers of iLES CFD simulations using Japanese 10PFLOS supercomputer "K" with the observation in the experiments showed that three key mechanisms exist in the flow fields. The detail analysis of the results explains why diverse opinions exist in the good burst frequencies for the flow control as well as how to use these devices for ranges of Reynolds numbers. The results also showed that drag reduction could be achieved by these devices, which may identify effectiveness of such devices at cruise conditions as well. The talk will also refer to the on-going collaboration with industries for applications of these devices. y this new two-fluid model is then compared to the bubble drift velocity as predicted by 2D CFD results.

Biography

Dr. Kozo Fujii is a professor of Tokyo University of Science, as well as a Professor of Emeritus and visiting Professor of Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (ISAS/JAXA) in Japan. After finishing his Ph. D. in 1980 and spending several years at NASA Ames R. C. and others, he returned to the ISAS in 1988. In March 2015, he retired from the ISAS/JAXA and moved to Tokyo University of Science. He has been working on computational fluid dynamics (CFD) for 40 years since the early days of CFD in aerospace. He has been a Fellow of AIAA since 2004 and served as editorial board members of many journals. He received many awards such as Daniel & Florence Guggenheim Award from International Council of the Aeronautical Sciences (ICAS) in 2004. He is currently an executive board member of ICCFD and board member of IACM. He is one of the 210 members of "Science Council of Japan". His current research interests focus on aero-acoustics and flow control, and he works with numbers of industrial partners. He gave numbers of invited keynote lectures in international symposiums. Recent ones include Parallel CFD in Montreal 2015, ICJWSF in Nagoya 2013, ICCFD in Hawaii 2012 and Joint ASME/JSME/KSME Fluid Engineering conference in Nagoya 2011.

Prof. Fujii supervised a number of EFD students during their internship at JAXA.