

AKIRA HIROSE, PhD, DSc, FAPS, FIEEE, FRSC (1941-2017)



It is with great sadness that I write words of tribute in memory of Dr. Akira Hirose, emeritus professor of Physics & Engineering Physics at the University of Saskatchewan.

Dr. Hirose completed his BSc and MSc at Yokohama National University, and his PhD at University

of Tennessee followed by a research scientist position at Oakridge National lab. He joined the University of Saskatchewan Physics Department in 1971 as research scientist, faculty in 1977, professor in 1979, and led the Plasma Physics Laboratory since 1994. He served as Department Head of Physics & Engineering Physics from 1998-2001 and held a Canada Research Chair from 2001 until his retirement in 2015.

Dr. Hirose made pioneering theoretical and experimental contributions to the basic understanding of waves and instabilities in plasmas and their effects on diffusion and heating of plasmas. Dr. Hirose was responsible for building the first Canadian tokamak (STOR-1M): a magnetic plasma containment device for studying controlled nuclear fusion. He also led the construction of its successor (STOR-M) which continues to be the only active tokamak in Canada. These tokamaks were used to demonstrate alternating current operation of a tokamak for the first time, an operation mode later adopted by the Joint European tokamak. Dr. Hirose has also carried out groundbreaking work with STOR-M on the development of compact torus injection fueling technology to meet the needs of future large tokamak reactors.

Akira's research accomplishments are incredible in their scope and impact: over 330 publications, including books, and book chapters. His accomplishments were recognized with numerous national and international honours including: Fellow of the Academy of Science of the Royal Society of Canada; Fellow of European Academy of Science; Fellow of the Institute of Electrical and Electronics Engineers (IEEE);

Fellow of the American Physical Society; IEEE Nuclear and Plasma Sciences Society Merit Award and Plasma Science and Applications Award; Saskatchewan Centennial Medal; University of Saskatchewan Distinguished Researcher Award and earned D.Sc. His award citations state, "For pioneering contributions to the understanding of linear waves, instabilities, and turbulent heating in plasmas and confinement studies in tokamaks"; and, "for outstanding contributions to theoretical/experimental work on basic and fusion related plasma science including studies on waves, turbulent heating, quasi-steady state operation and anomalous transport in tokamaks."

Dr. Hirose was also a distinguished teacher, a legendary instructor of an advanced EM theory graduate course. Dr. Hirose supervised more than 30 MSc/PhD theses and supervised many postdoctoral fellows and research associates, helping ensure continued progress in science and engineering for the benefit of humanity.

Dr. Hirose was active in the Canadian Association of Physicists: a member since 1975 (and sustaining member for many years), and Chair of the Division of Plasma Physics in 1980 and in 1994. His work was honoured during a special session at the 2015 Canadian Association of Physicists congress. He was an Associate Editor for the Canadian Journal of Physics (2008-2010) and a member of the Editorial Board (2010-).

In his personal life Akira enjoyed playing tennis and Go, and also enjoyed classical music. Akira will be lovingly remembered by his wife, Kimiko Hirose; son, Tad Hirose; daughter, Kyoko Hirose; and grandchildren, Vanessa, Patrick and Lovely Rose. He will be dearly missed by his many friends and colleagues.

Dr. Tom Steele
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