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Obituary

George Zames, 1934-1997

On August 10, George Zames passed away in his home in Montreal, after a short illness. With him, control has lost one of the persons whose vision and contributions shaped the field during the second half of the twentieth century.

Zames was born in Lodz, Poland, in 1934. His family fled the Nazi invasion of Poland, and via the Soviet Union and Japan, they ended up in Shanghai, where they spent the remaining war years in relative tranquility. It was moving to hear George tell during his plenary lecture at the CDC in Kobe last year that it was thanks to the transit visa granted by the Japanese consul in Vilnius that he and his family were able to flee Europe and come to Kobe.

After the war, Zames moved to Montreal, where he attended high school, and then McGill University. He was a graduate student, first at Imperial College in London and subsequently at MIT, where he received his Ph.D. in electrical engineering in 1960. He was an assistant professor at MIT, and subsequently joined NASA's research center in Cambridge, Massachusetts. When this center was closed, he moved to the Technion, and after a few years he returned to McGill where he has worked since 1974.

Zames received many awards for his work. Among these are the Killam prize (Canada's most important scientific award), the Field Award of the IEEE Control System Society in 1984 (the main yearly award in the field), and several outstanding paper awards.

George's vision of control was based on two dominant insights:

(i) the main aim of control is to cope with uncertainty, and

(ii) system models should express this uncertainty, but a very precise model of uncertainty is an oxymoron.

It was this vision that led him to develop input/output stability theory, with the elegant small gain and positive operator theorems, and H_∞ control. These concepts and results have become the core of control theory. George was suspicious of state space methods (the state space being a very model-sensitive concept) and of stochastic models. He viewed robustness and stability as much more central goals than optimal performance based on a precise model. George loathed mathematical snobbery. These views have become quite acceptable now, but they were very original in the sixties, when control was taken by state models, optimal control, stochastics, and the mathematization of the field.

George took keen interest in young people entering the field. As graduate students at MIT, when Zames worked at the NASA Research Center practically across the street, we often enjoyed the benefit of his generous sharing of insights. My own Ph.D. dissertation was directly influenced by his ideas. Our paths crossed very frequently since, and meeting him was always stimulating and enjoyable. It is with great sadness that one comes to realize that this is now a thing of the past.

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