

David Korff FREE

Albert Altman; Carolyn Duzy; Robert B. Myers



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pean countries. The participants unanimously decided to dedicate these meetings to Amaldi.

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David Korff

David Korff, a professor of computer science and former professor of physics at the University of Lowell, died suddenly on 30 August 1988, at the age of 52. Korff had achieved worldwide recognition for his contributions to the field of atmospheric light propagation.

Korff received his BA from Harvard University (1956) and his PhD in physics from Brandeis University (1963). His doctoral research, done under Kenneth Ford, was in quantum field theory. After teaching for several years at the University of Maryland, he was invited to develop a program in theoretical physics at the Lowell Technological Institute in Lowell, Massachusetts. While there he also became a consultant to Avco Everett Research Laboratory. During the last several years of his life, he founded North East Research Associates, an R&D company in Woburn, Massachusetts.

While at Lowell Korff headed a committee appointed by Kevin Harrington, then State Senate President, which formulated a plan to reorganize the higher-education system. This plan was eventually adopted by Governor Michael Dukakis of Massachusetts, and formed the blueprint for the system in place today. In addition, Korff helped develop the first doctoral program in physics at the institute. As president of the institute's first faculty union, he structured the school's merger with Lowell State College to create the University of Lowell.

Korff's research was initially in quantum field theory. While at the University of Maryland he wrote a paper proving the integral spin nature of the photon using group theoretical methods. Along with Young Suh Kim and Sado Oneida he carried out research in weak interactions and SU(3) invariance, and at Lowell he worked with Zoltan Fried and Adolph Baker on nonlinear quantum electrodynamics. In 1971 Korff wrote a key paper clarifying the atmospheric optics and optical physics of speckle

interferometry, a technique now widely used by astronomers for high-resolution imaging, and in 1975 he was the first to explain the atmospheric "isoplanatic patch," the range of viewing angles for which the optical effects of turbulence are invariant. Along with graduate students Richard Leavitt and Edward Salesky, Korff developed a cutoff-independent theory of line broadening and shifting in atomic and molecular spectra. Korff and David Shulman, a computer-science student, developed a computer code for modeling the propagation of high-powered lasers through the atmosphere that combines the effects of turbulence, thermal blooming and Raman conversion. At Avco Korff was instrumental in deriving a linear stability theory for high-powered continuous-wave CO₂ lasers. In nonlinear optics, he developed, along with Allen Flusberg, Carolyn Duzy and Eric Mazur, the Hilbert-space formulation for explaining broadband Raman amplification and Raman amplification of more than one pump beam.

In recent years Korff's efforts were in both administration and research. As president of North East Research Associates Inc, he formed a group of highly motivated scientists and computer scientists to analyze problems in atomic physics, laser physics, nonlinear optics and atmospheric propagation. Shortly before his death, Korff, with Robert Myers, showed the importance of turbulence in thermal blooming. Most recently, Korff and Steven Ebstein invented a new technique using fourth-order correlation interferometry, which involves mixed pupil-plane/image-plane imaging.

Korff's love of problem solving, and in particular stochastic processes, extended beyond physics. He especially loved a good card game, and would share with his friends, in addition to his insights in optics, the "Korff system" for success at the gaming tables. David was a "guru" for many scientists, students and even for a good number of his friends. He will be missed.

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Stanley Sekula

Stanley T. Sekula, a research physicist at Oak Ridge National Laboratory, died of a cerebral hemorrhage on 5 December 1989. He was 62 years old.