OBITUARIES

P K "Pasha" Kabir 1933–2004

Prabahan Kemal Kabir, retired professor at the University of Virginia, died on 29 August 2004 at Berhampur (Orissa), India, while swimming in the Bay of Bengal.

Kabir was born in Calcutta on 30 June 1933, and was known to his family and friends as Pasha. His family was prominent in Indian politics, his father being minister of education in the Nehru government. He finished his undergraduate studies in Delhi at age 18, spent two more years there on his MSc under R Majumdar, then came to the US as a doctoral student at Cornell, where his work was on the Lamb shift in helium and his thesis advisers were Hans Bethe and Edwin Salpeter. After completing his PhD, Kabir spent a year (1956–7) at the Institute for Advanced Study at Princeton, when parity violation was large on the agenda, and the following year (1957–8) at Birmingham University in the UK with Rudolf Peierls. Kabir considered Majumdar, Bethe and Peierls as his teachers and mentors.

After Birmingham, Kabir went to teach at the University of Calcutta, but two years later moved to the US as a junior faculty member at Carnegie-Tech. He then went to CERN for two years as a visiting scientist (1963–5), followed by six years on the staff at the Rutherford Laboratory (1965–71) in the UK.

Pasha Kabir in the 1970s on a visit to Poland.

He returned to the US in 1971 as professor at the University of Virginia. This remained his base while he still travelled frequently to Europe and India. He had very many friends in America, Asia and Europe.

Kabir's many contributions in physics centred on symmetry and symmetry violation, especially charge–parity (CP) and time-reversal (T) violation. He edited the book *Developments in the Theory of Weak Interactions*, which reprinted all the important contributions to the field up to 1963, and was author of *The CP Puzzle* (1966), which remains widely quoted as a detailed account of the neutral kaon system. His later description of T violation in the kaon system, without assuming CPT invariance, has been important in stimulating experimental work.

Kabir realized that T violation implies the breaking of detailed balance, and in 1970 he introduced a parameter to describe this in the kaon system; the Kabir parameter was at last measured 30 years later. His name is also given to an important theorem in field theory: the Feinberg–Kabir–Weinberg theorem, the first example of a cancellation of a flavour-changing neutral current (muon to electron).

Kabir suggested and helped to invent many other new ideas, which like his T-violation parameter may take decades to be observed experimentally. Many of his ideas have not appeared as his own publications; he helped friends with aggressive and witty questions on publications for which he was not an author. He was not a follower of recent trends, labouring on symmetries from his time at the Institute of Advanced Study onwards. He had a fiercely independent mind and refused to accept certain new ideas if they clashed with his intuition.

Pasha Kabir was an exceptional and wonderful person – a warm and generous friend and a stimulating and provocative companion. He is sorely missed by his many friends and collaborators throughout the world.

P C Gugelot and P Q Hung, University of Virginia; Gabriel Karl, Guelph-Waterloo Physics Institute; and Sandip Pakvasa, University of Hawaii.