Alexey Tyapkin 1926-2003


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Alexey Alexeyevich Tyapkin, a legendary figure of the physics community at the Joint Institute for Nuclear Research (JINR) and an outstanding Russian scientist well known for his pioneering research in high-energy physics, passed away on 10 November 2003. His bright ideas, original theoretical developments and experimental results, along with his extreme dedication to science and his independent and earnest character, raised the level of what a physicist can mean and do for society.

He began his scientific career at the Kurchatov Institute of Atomic Energy after graduating from the Moscow Physics Engineering Institute. Tyapkin came to JINR Dubna in 1953, where he developed several original methods for experiments and used them at the first high-energy proton accelerator in Russia. In 1955, independently of the Italian physicist Marcello Conversi, he proposed and applied a new method for a controlled pulsed high-voltage supply for Geiger counters. His Geiger hodoscopes were used in several sophisticated experiments. Later the method of the controlled pulsed high-voltage supply became the basis of a new type of detector - the spark chamber. Tyapkin was one of the pioneers who studied the properties of spark chambers and was ahead of many other researchers in the world. A 5 m long magnetic spectrometer with spark chambers was constructed under his leadership and used at the 70 GeV accelerator in Protvino in a CERN-JINR-USSR experiment that discovered radially excited states of the pion and confirmed other known resonances.

Tyapkin was able to develop important ideas in independent scientific directions during several decades. In 1953 he proved theoretically that strong particle focusing could be obtained in a sign-variable magnetic system. The Physics Institute of the Russian Academy of Sciences implemented his idea in the design and construction of an electron prototype of the ring cyclotron. In 1975 he proposed the possibility of charmed super-nuclei production, and in 1976 put forward an original idea to develop the model of Sakata baryons. Later, in 1993, he proposed the existence of sub-threshold Cherenkov radiation and carried out related measurements at CERN.

Tyapkin had a wide range of scientific interests, which impressed his colleagues and students. He was a professor at Moscow State University (MSU) and lectured to students there for 43 years; for the last 15 years he headed the Particle Physics

Department of the MSU Physics Faculty. In 1988 he also became a member of the editorial board of the journal *Foundations of Physics Letters*.

Tyapkin was not only an outstanding scientist but also a bright, extraordinary personality. He was a skillful sportsman throughout his life, and was particularly fond of water skiing. He had a masters degree in this field and contributed much to the foundation and development of the sport in Dubna, which later became internationally renowned for producing champions. Everyone who was lucky enough to have collaborated with Alexey Tyapkin, or to have simply communicated with him, will remember a pioneer of high-energy physics, a bright personality, and a generous and friendly man.