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## OBITUARY

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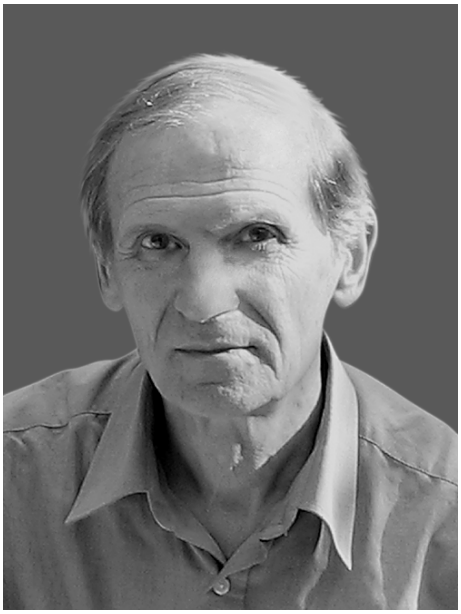
# Aleksei Borisovich Kaidalov (July 20, 1940–July 25, 2010)



Aleksei Borisovich Kaidalov, a renowned theoretical physicist and a corresponding member of the Russian Academy of Sciences, passed away on July 25, 2010, after a grave illness.

Kaidalov was born in Moscow. In 1963, he graduated from the Moscow Engineering Physics Institute (MEPhI), where he specialized in nuclear and particle physics. He was the last graduate student of I.Ya. Pomeranchuk, head of the Theoretical Physics Department at the Institute of Theoretical and Experimental Physics (ITEP, Moscow) at that time. Upon graduating from MEPhI, Kaidalov joined ITEP, where he worked to his last days. There, he obtained his candidate and doctoral degrees and traveled the route from a junior researcher to head of a laboratory. In 2003, Kaidalov was elected as a corresponding member to the Russian Academy of Sciences.

Kaidalov became involved in investigations into high-energy physics at the time when huge arrays of experimental data on hadronic processes came from ITEP and Protvino accelerators. For want of adequate theoretical models, it was impossible to describe systematically those data; therefore, the method of complex angular momenta (also known as the Reggeon approach), which was first used by Kaidalov to describe hadron interactions at high energies, became the beginning of a new era in these realms. Kaidalov was the author of seminal studies devoted to moving Regge branch points and their contribution to cross sections for two-particle processes, as well as studies devoted to analysis of inelastic diffractive processes. He obtained an estimate of the three-Pomeron coupling constant, which plays a fundamental role in Reggeon field theory.

A new approach to describing high-energy multiparticle-production processes that was developed by Kaidalov and which is known as the model of quark–gluon strings made it possible to derive relations between various features of hadrons and to predict masses and widths of new resonances.

A highly successful description of cosmic-ray data and data from hadron colliders available at that time could be reached on the basis of this method. The first results obtained at the Large Hadron Collider (LHC) are in good agreement with the results of Kaidalov's calculations.

It is impossible to imagine present-day high-energy physics without the well-known series of Kaidalov's studies devoted to nucleus–nucleus interactions, deep-inelastic lepton scattering at very high energies, and diffractive hadron production in these processes.

His great erudition in various realms of physics and astonishing scientific intuition rendered invaluable Kaidalov's participation in any discussions, even when the subject of discussion was far from the range of his personal studies and interests. In his scientific searches, he was always guided by the criteria of beauty and harmony. He was sincerely open to people and was endowed with rare talents in various fields of science and in arts and sport.

The death of Kaidalov is a heavy blow to his friends and colleagues, to the entire physics community worldwide. His creative potential, research activity, and loyalty to science remained inexhaustible to the very end. All those who had the privilege of knowing Aleksei B. Kaidalov will for ever remember him as a bright and charming personality full of energy and new ideas.

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