

CERN Courier

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Obituaries

Dmitry Bardin 1945–2017

Our colleague Dmitry (Dima) Yurievich Bardin, an academic at Dzhelepov Laboratory of Nuclear Problems of the Joint Institute for Nuclear Research (JINR), Dubna, Russia, left us on 30 June.



[Bardin](#)

Dima graduated with honours from Moscow State University and started research work at JINR in 1968. He defended his PhD thesis under the guidance of Samoil Bilenky in 1974 based on studies of elastic pion–electron scattering and rare decays of pions and kaons. Since then, Dima’s scientific work was devoted to the calculation of complete electroweak and QCD radiative corrections in the Standard Model. He had close interactions with many experimental collaborations at LEP, SPS, the LHC (CERN) and HERA (DESY).

From 1978 to 1986 Dima derived, with various collaborators, electroweak corrections to deep inelastic scattering and developed a pioneering approach to renormalisation in the unitary gauge. These two projects were the basis of many now-classical applications of radiative corrections in the Standard Model, performed in close co-operation with experiments at CERN and other research centres.

With the advent of LEP, Dima’s scientific activity focused on precise calculation of the properties of the Z boson, in particular by developing the ZFITTER project. In 1989 he contributed substantially to the now-famous workshop Z Physics at LEP1, and in 1995 he was a convener of the working group for event generators for Standard Model processes at LEP2. During 1994–1995 he was a co-ordinator of the precision calculations working group at CERN. The CERN report *Precision Calculations for the Z Resonance* was the basis for the well-known “blue-band plot” of the LEP electroweak working group. ZFITTER was one of the main codes used for LEP1 and LEP2 data analyses, and was a central theoretical tool for predicting the masses of the top quark and the Higgs boson prior to their discoveries.

Further software packages in which Dima was directly involved are: *muela* for polarised mu-e scattering, *GENTLE* for LEP2 data analysis and *HECTOR* for radiative corrections to ep scattering. Since 2000 Dima also led the software system *SANC* for calculations of radiative corrections for LHC processes, and together with Giampiero Passarino he authored the significant monograph *The Standard Model in the Making*.

Dima Bardin exemplified faithful and selfless service to fundamental science. It is impossible to overestimate his role in creating an atmosphere of high standards in scientific research. With broad knowledge, extensive experience and diligence, he was a true professional in his field. A severe, debilitating and prolonged illness brought a great deal of suffering and pain, but despite this he continued working until his last day.

Dima was not only an outstanding scientist but also a reliable friend and colleague, and a wonderful family man. We feel a great loss, not only personally but also as a scientific community.

• *Andrej Arbuzov, Wolfgang Hollik, Lida Kalinovskaya and Tord Riemann, on behalf of his colleagues and friends.*