

Boris A. Arbuzov

D.Habil., Ph.D., M.S.

Professor of Physics Department of Lomonosov Moscow State University, Leading Researcher of Skobeltsyn Institute of Nuclear Research of MSU

## Curriculum vitae

**Born:** May 12, 1938, Moscow, Russian Federation

**Citizenship:** Russian Federation

### Educations and Degrees

- D.Habil., "Geometrical schemes of interactions of elementary particles", 1970, [Joint Institute for Nuclear Research](#)
- Ph.D. "On possibility to expand S-matrix by coupling constant in the quantum field theory", 1965, [Joint Institute of Nuclear Research](#)
- M.S., "On asymptotic behavior of the photon propagator in the quantum electrodynamics", 1961, Department of Physics of [Lomonosov Moscow State University](#)

### Professional Status

- 1999-to date, Leading Researcher of [Skobeltsyn Institute of Nuclear Research of MSU](#)
- 1994-to date, Full Professor of Physics Department of [Lomonosov Moscow State University](#), Chair of Elementary Particles Physics
- 1980-1994, Full Professor of Physics Department of [Lomonosov Moscow State University](#), Chair of High Energy Physics
- 1974-1980, Assistant Professor of Physics Department of [Lomonosov Moscow State University](#), Chair of High Energy Physics
- 1966-1999, Senior Researcher of [Institute of High Energy Physics](#)
- 1961-1965, Researcher of [Joint Institute for Nuclear Research](#)

### Membership

- Member of Scientific Council in Neutrino Physics of the [Russian Academy of Sciences](#) (1970-1990)

### Scientific Interest and Publications

Prof. B.A. Arbuzov is the author of about 200 scientific works (lectures, papers, preprints) devoted to problems of the quantum field theory and the theory of elementary particles. He is the author of university courses of lectures:

1. B.A. Arbuzov, "Interaction of elementary particles", Moscow University Publishing House, Moscow, 1986 (in Russian).
2. B.A. Arbuzov, "Interaction of elementary particles", part 2, Moscow University Publishing House, Moscow, 1988 (in Russian).
3. B.A. Arbuzov, "Standard Theory", Proceedings of 1995 European School of High-Energy Physics, CERN 96-04, Geneva, 1996, pp. 23 -57.

Non-perturbative effects in QCD were considered e.g. in works

1. A.I. Alekseev, B.A. Arbuzov, V.A. Baikov, Infrared Asymptotics Of Gluon Green's Functions In Quantum Chromodynamics *Theor.Math.Phys.* 52 (1982) 739-746
2. A.I. Alekseev, B.A. Arbuzov, Analyticity and minimality of nonperturbative contributions in perturbative region for  $\alpha_s$ , *Mod.Phys.Lett.* A13 (1998) 1747-1756.

### List of selected recent publications in English

1. B.A. Arbuzov and I.V. Zaitsev, LHC would-be  $\gamma\gamma$  excess as a non-perturbative effect of the electro-weak interaction, *Phys.Rev.* D85 (2012) 093001; e-Print: arXiv:1202.4885 [hep-ph].
2. B.A. Arbuzov, Nonperturbative solutions in the electroweak theory, *Theor.Math.Phys.* 171 (2012) 448-457.
3. B.A. Arbuzov, I.V. Zaitsev, CDF  $W_{jj}$  anomaly as a non-perturbative effect of the electro-weak interaction, *Int.J.Mod.Phys.* A27 (2012) 1250012; e-Print: arXiv:1110.3137 [hep-ph].
4. B.A. Arbuzov, I.V. Zaitsev, Non-perturbative solutions in the electro-weak theory with  $t\bar{t}$  condensate and the  $t$ -quark mass, *Int.J.Mod.Phys.* A26 (2011) 4945-4958; e-Print: arXiv:1107.5164 [hep-ph].
5. B.A. Arbuzov, E.E. Boos, V.I. Savrin, CMS ridge effect at LHC as a manifestation of bremsstrahlung of gluons due to the quark-anti-quark string formation, *Eur.Phys.J.* C71 (2011) 1730; e-Print: arXiv:1104.1283 [hep-ph].
6. B.A. Arbuzov, Bogoliubov compensation principle in the electro-weak interaction: Value of the gauge constant, muon  $g-2$  anomaly, predictions for Tevatron and LHC, *Eur.Phys.J.* C61 (2009) 51-59, e-Print: arXiv:0901.3997 [hep-ph].
7. B.A. Arbuzov, M.K. Volkov, I.V. Zaitsev, NJL interaction derived from QCD: Vector and axial-vector mesons, *Int.J.Mod.Phys.* A24 (2009) 2415-2430; e-Print: arXiv:0809.4951 [hep-ph].
8. B.A. Arbuzov, Infrared non-perturbative QCD running coupling from Bogolubov approach, *Phys.Lett.* B656 (2007) 67-73; e-Print: hep-ph/0703237.
9. B.A. Arbuzov, M.K. Volkov, I.V. Zaitsev, NJL model derived from QCD, *Int.J.Mod.Phys.* A21 (2006) 5721-5742; e-Print: hep-ph/0604051.
10. B.A. Arbuzov, Spontaneous generation of effective interaction in a renormalizable quantum field theory model, *Theor.Math.Phys.* 140 (2004) 1205-1221.

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