Name: DOLGOV Alexander
Date of birth: July, 1, 1941.
Married, two children.
Nationality: Russian and Italian
mail: dolgov@fe.infn.it

Graduated from Moscow Physical Technical Institute (MPTI) in 1964 with major Experimental Nuclear Physics.

Postgraduate student in 1969. Candidate of Science in 1969 (corresponds to European or US PhD)
Dissertation: Symmetries in Electromagnetic and Weak Interactions.

Doctor degree in Physics (corresponds to European or US Professor of Physics) in 1982.
Dissertation: Cosmology and Elementary Particles.
From 1967 till 1970 junior researcher in ITEP. From 1970 till 1984 senior researcher in ITEP.
From 1984 leading researcher in ITEP.
From 1996 to 2000 professor professor at TAC, Copenhagen, Denmark.
From January 2000 to 2006 Dirigente di ricerca INFN, Sezione di Ferrara.
From 2006 professor at the University of Ferrara.

Teaching experience: classes on field theory, quantum mechanics and weak interactions at MPTI during 1964 - 1967.
A large number of lectures on elementary particle and cosmology in ITEP winter schools as well as in those of the Leningrad Institute of Nuclear Physics and Moscow Institute of Nuclear Research during last 30 years.
Classes on classical mechanics and electrodynamics in Univ. of Michigan.
Lectures on particle physics and cosmology in University of Valencia.
Lectures on Cosmology of the Early Universe in the University of Copenhagen and in Scuola Normale in Pisa. Mini-course "Physics of them Early Universe" in Center for Astrophysics at the Instituto Superior Tecnico, Universidade Tecnica de Lisboa, May \u2010 June 1998 for CENTRA researcher's, undergraduate and graduate students.
Series of lectures on Neutrino Cosmology in University of Dortmund, May 1998, within "Graduirtencolleg".
Continuous lecture courses on Cosmology and General Relativity in the University of Ferrara.

Research activity: Cosmology and astrophysics, gauge theories, field theory including quantum gravity, cosmology of the early Universe, in particular baryogenesis and creation of antimatter, cosmological implications of neutrino, neutrino kinetics and oscillations, generation of magnetic fields, universe reheating after inflation, cosmological constant, and problems of dark matter and dark energy, production of particles by external fields, physics of cosmic microwave background, its spectral and statistical properties.

Publications in these fields include more than 200 titles Among them there are several review papers published in Reviews of Modern Physics, Physics Reports, Sov. Phys. Uspekhi, Surveys in High Energy Physics, and books "Kosmologiya Rannei Vselennoi\u201d ("Cosmology of the early Universe"), MGU Publishers, Moscow, 1988 and "Basics of Modern Cosmology", Edition Frontier, Paris, 1990.

Scientific awards:
1996, Landau-Weizmann Award for theoretical physics, by the Weizmann Institute.
2009, Pontecorvo Prize for work on neutrino physics by JINR, Dubna, Russia.
2011, Friedmann Prize for fundamental works on cosmology by Russian Academy of sciences.
2013 Markov Prize by INR

Main scientific results:

1. Discovery that the chiral anomaly leads to a scalar massless pole 1/q^2 in scattering amplitudes and to chiral symmetry breakdown.

2. Generalization of the Froissart theorem for the case of massless neutrino exchange.

3. Derivation of the cosmological limit on heavy neutrino mass.

4. A proof that conformal anomaly leads to production of photons in cosmological background. Application of this mechanism to the problem of generation of the large scale cosmic magnetic fields.

5. First work on implication of neutrino oscillations on big bang nucleosynthesis. Derivation of quantum kinetic equation for neutrino density matrix in thermal background.

6. A suggestion of the adjustment mechanism for vacuum energy (cosmological constant). The idea that at the late stage of the universe evolution the cosmological energy density may be dominated by a new form of energy, later discovered as dark energy.

7. First non perturbative calculations of particle production by the inflaton field (universe reheating). A possibility of parametric resonance excitation.

8. Non - equilibrium kinetics of elementary particles in cosmological plasma with application to baryogenesis and neutrino physics. Numerical and analytical methods developed.
Discovery that, due to non-equilibrium effects, the effective number of neutrino species is larger than three, namely it is 3.046 which is accepted now as the canonical number.

Invited speaker at many international conferences and member of Scientific
Advisory and Organization Committees

Il sottoscritto acconsente, ai sensi del D.Lgs 30/06/2003 n. 196, al trattamento dei propri dati personali e alla pubblicazione del presente curriculum vitae sul di Ferrara." firmato e in PDF.