CURRICULUM VITAE

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In 1991 I entered Dnepropetrovsk National University and in 1996 I graduated from the University, Department of Theoretical Physics with the Diploma with Honours. In 1997-1999 I worked as a researcher at the Department of Theoretical Physics. In 2000 I began a graduate program at the National University of Singapore (thesis advisor Edward Teo).

In July 2003 I gained a Doctor of Philosophy degree from Department of Physics, National University of Singapore. There I was also working as a Graduate Teaching Assistant in 2000-2003 yrs. From 2004/04 to 2006/04 I was holding a postdoctorate position at the Department of Gravity and Field Theory of Institute de Ciencias Nucleares (ICN), National Autonomous University of Mexico (UNAM). Recently I am working in Theoretical Physics Group at Physics Department of Stellenbosch University (South Africa).

Research Interests/Expertise:

- foundations and generalizations of quantum mechanics
- exact solutions of field theory and gravity (incl. black holes and p-branes) and their properties
- low-energy limit of the modern high-energy theory (string/Membrane theory)
- role of scalar field in Universe and its origin
- fundamental symmetries of Nature and their breakdown or violation
- testing extended theories of gravity (incl. PPN formalism) and fundamental physical principles
- dark matter problem (phenomenon of flat rotation curves in galaxies)
- cosmology, dark energy, origin of accelerated expansion of Universe

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Education:

1991-1996	Diploma of Specialist in Physics (with Honours) Dniepropetrovsk National University, Ukraine
2000-2003	PhD, Physics National University of Singapore

Career/Experience:

2000-2003	Graduate Tutor, National University of Singapore
2004-2006	Postdoctorate, Institute de Ciencias Nucleares National Autonomous University of Mexico

Memberships, Honours and Fellowships:

1996	Diploma with Honours Dniepropetrovsk National University, Ukraine
2002	President's Graduate Fellowship National University of Singapore
2005	Simons Fellowship Stony Brook University, New York

Conferences/Seminars:

1998	WE-Heraeus-Seminar Mathematical problems in general relativity	PBH Bonn
1999	Conference 50 Years of the Nuclear Shell Model	Heidelberg
1999	WE-Heraeus-Seminar Gyros, Clocks, and Interferometers: Testing General Relativity in Space	PBH Bonn
2000	Conference Mathematics and Theoretical Physics: Challenges for the 21st Century	Singapore
2004	Two seminars Separability approach to Einstein gravity coupled to scalar and electromagnetic fields and its applications: Classification and sector structure, derivation of low-energy limit of string theories "without" Kaluza-Klein reduction, p-branes and exact scalar black hole solutions, BH-compatible cosmology	ICN-UNAM Mexico City
2006	Talk: Why do we live in a 4D world: Can cosmology, black holes and branes give an answer?	ICN-UNAM (Mexico City), IV Summer School on Math Physics

(Belgrade)

Publications:

xx) Parametrized Post-Newtonian analysis of Bekenstein's tensor-vector-scalar theory for MOND.
By K.G. Zloshchastiev, *et al.*
(in preparation)

21) Why do we live in a 4D world: Can cosmology, black holes and branes give an answer?
By K.G. Zloshchastiev.
Phys. Lett. **B638** (2006) 89-93 [hep-th/0601221]

20) Generic approach to dimensional reduction and selection principle for low-energy limit of M theory.
By K.G. Zloshchastiev.
[hep-th/0512128]

19) Co-existence of black holes and scalar field in cosmology.
By Konstantin G. Zloshchastiev.
Phys. Rev. Lett. **94** (2005) 121101 [hep-th/0408163]

18) Core structure and exactly solvable models in dilaton gravity coupled to Maxwell and anti-symmetric tensor fields.
By K.G. Zloshchastiev.
Phys. Lett. **B527** (2002) 215-225 [hep-th/0102127]

17) New approach to the classification and solving of Einstein-Maxwell dilaton gravity and its application for a particular set of exactly solvable models.
By Konstantin G. Zloshchastiev.
Phys. Rev. **D64** 084026, 2001. [hep-th/0101075]

16) Field to particle transition and nonminimal particles in sigma model, dilaton gravity and gauged supergravity.
By Konstantin G. Zloshchastiev.
Phys. Lett. **B519** 111-120, 2001.

15) Classical and quantum comparison of kink and bell solitons as zero-branes.
By K.G. Zloshchastiev.
Mod. Phys. Lett. **A15** 67-81, 2000.

14) Field-to-particle transition based on the zero-brane approach to quantization of multiscalar field theories and its application for Jackiw-Teitelboim gravity.
By Konstantin G. Zloshchastiev.
Phys. Rev. **D61** 125017, 2000. [hep-th/9912063]

13) Zero-brane approach to quantization of biscalar field theory about topological kink-bell solution.
By Konstantin G. Zloshchastiev.
Europhys. Lett. **49** 20-26, 2000. [hep-th/9912064]

12) Evolution of thin wall configurations of texture matter.
By Konstantin G. Zloshchastiev.

Gen. Rel. Grav. **31** 1821-1836, 1999. [gr-qc/0001002]

11) Zero-brane approach to study of particle - like solitons in classical and quantum Liouville fieldtheory.
By Konstantin G. Zloshchastiev.
J. Phys. **G25** 2177-2187, 1999. [hep-th/9911013]

10) Nonminimal particle - like solutions in cubic scalar field theory.
By Konstantin G. Zloshchastiev.
Phys. Lett. **B450** 397-404, 1999. [hep-th/9911012]

9) Classical and quantum evolution of nonisentropic hot singular layers in finite temperature general relativity: Letter.
By Konstantin G. Zloshchastiev.
Gen. Rel. Grav. **31** 571-577, 1999. [gr-qc/9911007]

8) Extended particle models based on hollow singular hypersurfaces in general relativity: Classical and quantum aspects of charged textures.
By Konstantin G. Zloshchastiev.
Int. J. Mod. Phys. **D8** 165-176, 1999. [gr-qc/9807012]

7) Plasma singular shells of Quark – gluon matter.
By Konstantin G. Zloshchastiev.
Int. J. Mod. Phys. **D8**:363-371, 1999. [gr-qc/9802021]

6) Barotropic thin shells with linear EOS as models of stars and circumstellar shells in general relativity.
By Konstantin G. Zloshchastiev.
Int. J. Mod. Phys. **D8**:549-555, 1999. [gr-qc/9802041]

5) Mass of perfect fluid black shells.
By Konstantin G. Zloshchastiev.
Mod. Phys. Lett. **A13**:1419, 1998. [gr-qc/9802042]

4) Acoustic phase lenses in superfluid He as models of composite space-times in general relativity: Classical and quantum properties with provision for spatial topology.
By Konstantin G. Zloshchastiev.
Acta Phys. Polon. **B30**:897-905, 1999. [gr-qc/9802060]

3) Radiation fluid singular hypersurfaces with de Sitter interior as models of charged extended particles in general relativity.
By Konstantin G. Zloshchastiev.
Class. Quant. Grav. **16**:1737-1744, 1999. [gr-qc/9707054]

2) Quantum kink model and SU(2) symmetry: Spin interpretation and T violation.
By Konstantin G. Zloshchastiev.
J. Phys. **A31**:6081-6085, 1998. [hep-th/9708018]

1) Monopole and electrically charged dust thin shells in general relativity: Classical and quantum comparison of hollow and atom - like configurations.
By Konstantin G. Zloshchastiev.
Phys. Rev. **D57**:4812-4820, 1998. [gr-qc/9708024]

Scientific Popular Publications:

3) The comeback of Aether? The “fifth element” and Lorentz invariance violation: history, modern view, relationship to Einstein’s theory. [in Russian]
By Konstantin G. Zloshchastiev.
Science and Life (*Наука и Жизнь*) № **1** (2007)

2) Black Holes: About singularity, information, entropy, cosmology and higher-dimensional grand unification theory in light of the modern theory of black holes. [in Russian]
By Konstantin G. Zloshchastiev.
Science and Life (*Наука и Жизнь*) № **12** (2005) 2-9

1) Black holes as fundamental objects of Universe: An analytical survey from Laplace to LHC. [in Russian]
By Konstantin G. Zloshchastiev.
Computerra (*Компьютерра*) **24** (**596**) (28/06/2005) 48-53