



Kostiantyn Zloschastiev (Konstantin Zloshchastiev)



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39 – 15/10/1974

Physics

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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. 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 Instituto de Ciencias Nucleares (ICN), National Autonomous University of Mexico (UNAM). From 2007/07 until 2009/07 I was a postdoctorate at the Department of Physics, Stellenbosch University, and from 2009/07 until 2010/08 – at the National Institute of Theoretical Physics (NITheP) in Stellenbosch, South Africa. From 2010/09 till 2011/08 I was a postdoctorate at the Center of Theoretical Physics, Department of Physics, University of Witwatersrand in Johannesburg, South Africa. Currently I am a postdoctorate fellow at School of Chemistry and Physics, University of KwaZulu-Natal in Pietermaritzburg, South Africa.

CURRENT RESEARCH		
Topic	Methodology	Application
Open quantum systems	<ul style="list-style-type: none"><li>See the publication list</li></ul>	Quantum computation & information systems

## UKZN main Publications

- 28) Non-Hermitian quantum dynamics of a two-level system and models of dissipative environments. By A. Sergi and K. G. Zloschastiev. Int. J. Mod. Phys. B 27 (2013) 1350163 [arXiv:1207.4877]
- 27) Singularity-free model of electric charge in physical vacuum: Non-zero spatial extent and mass generation. By V. Dzhusushaliev and K. G. Zloschastiev. Cent. Eur. J. Phys. 11 (2013) 325-335 [arXiv:1204.6380]
- 26) Volume element structure and roton-maxon-phonon excitations in superfluid helium beyond the Gross-Pitaevskii approximation. By K. G. Zloschastiev. Eur. Phys. J. B 85 (2012) 273 [arXiv:1204.4652]
- 25) Quantum Bose liquids with logarithmic nonlinearity: Self-sustainability and emergence of spatial extent. By A. V. Avdeenkov and K. G. Zloschastiev. J. Phys. B: At. Mol. Opt. Phys. 44 (2011) 195303 [arXiv:1108.0847]

## Past Researches

- theories of condensed matter phenomena including superfluidity
- theory of open quantum systems and dissipation
- theories of physical vacuum
- foundations and generalizations of quantum mechanics incl. non-Hermitian and non-commutative theories
- exact solutions of field theory and gravity (incl. black holes and p-branes) and their properties
- 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
- cosmology, dark matter/energy, origin of accelerated expansion of Universe

## Future Interests

- See the previous section

## Extra Interests

Drinking vodka