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I completed my PhD (candidate of science in physics and mathematics) in the Saratov State University (Russian Federation) in 2011. I am currently a Post-Doctoral research fellow at the National Institute for Theoretical Physics node of University of KwaZulu-Natal in Durban.

Research experience: Interaction of hydrogen-like atoms with intense ultra-short laser pulses, Coherent control of Rydberg electron, Exotic atoms and molecules, Rydberg wave packets, Atom of antiprotonic helium, Atomic nanoclusters

CURRENT RESEARCH

Topic	Methodology	Application
Quantum optics Open quantum systems Cavity quantum electrodynamics Current-biased Josephson-junction Nitrogen-vacancy-center ensemble Josephson parametric amplifier	<ul style="list-style-type: none">• Dissipative state preparation• Adiabatic elimination of fast variables• Reduced master equation for nitrogen-vacancy-center ensembles• Symplectic transformation to normal mode operators• Achievement of steady-state entanglement• Obtaining Gaussian Graph state - cluster state	Nitrogen-vacancy-center ensemble based continuous-variable quantum information processing One way quantum computing Realization of large-scale spin-based quantum networks

UKZN main Publications

Past Researches

1. V.L. Derbov, V.V. Serov, N.I. Teper, "Investigation of hydrogen atom radiation under the action of Ti:sapphire laser" (In Russian), Computer optics. 2010. V. 34(2). P. 156-161.
2. V.L. Derbov, **N.I. Teper**, "Forming of Rydberg wave packet under the action of the pulse of Ti:sapphire laser", Proceeding of SPIE. V. 7501. P. 75010I (2009)

Future Interests

Preparation of Multi-mode Gaussian Graph state (cluster state)

Extra Interests

Modern literature, fitness, traditional and urbanistic culture, garden plants