CV Milan Radonjić

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Technical University of Kaiserslautern
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Center for the Study of Complex Systems
Institute of Physics Belgrade
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RESEARCH INTERESTS

- Open quantum systems
- Macroscopic quantum systems
- Condensates of light
- Photonic quantum simulators
- Hybrid quantum-classical systems
- Coherent and non-linear effects in atomic quantum optics

ACADEMIC CAREER

2018 – *Postdoctoral Fellow*, Department of Physics, TU Kaiserslautern, Germany

2015 – 2017 *Postdoctoral Fellow*, Faculty of Physics, University of Vienna, Austria

2014 – *Assistant Research Professor,* Institute of Physics Belgrade, Serbia

2010 – 2014 *Research Assistant,* Institute of Physics Belgrade, Serbia

2008 – 2010 *Junior researcher,* Institute of Physics Belgrade, Serbia

EDUCATION

2008 – 2013 *PhD in Physics,* Faculty of Physics, University of Belgrade, Serbia
Research field: Quantum Optics
Thesis title: "*Electromagnetically Induced Coherent Effects in Laser Excited Raman Resonances in Rubidium Vapor*", Advisor: Dr. Branislav Jelenković

2002 – 2007 *BSc in Physics (the best in the class)*, Faculty of Physics, University of Belgrade, Serbia
Thesis title: "*The Quantum Hall Effect in Graphene*", Advisor: Dr. Milica Milovanović

WORKING EXPERIENCE AND PARTICIPATION IN PROJECTS

2015 – 2017 "Impurities in Bose-Einstein Condensates", bilateral research project, Serbian Ministry of Education & Science and DAAD

2014 – 2017 "Ramsey spectroscopy in Rb vapour cells and application to atomic clocks", SCOPES grant IZ73Z0_152511, Institute of Physics Belgrade, Serbia and Laboratoire Temps-Fréquence, Neuchâtel University, Switzerland

2013 – 2014 "Numerical and Analytical Investigation of Dipolar Bose-Einstein Condensates", bilateral research project, Serbian Ministry of Education & Science and DAAD

2011 – "Generation and characterization of nano-photonic functional structures in bio-medicine and informatics", National research project

2011 – "Holographic methods for generation of specific wave fronts for efficient control of quantum coherent effects in laser-atom interaction", National research project

2009 – 2011 "Quantum and optical interferometry", National research project

2009 – Employed at the Photonics Center of the Institute of Physics Belgrade, Serbia

2008 – 2009 FP6 project of the European Commission "Reinforcing research center for quantum and optical metrology", Institute of Physics Belgrade, Serbia

2008 PhD scholarship of the Ministry of Science of the Republic of Serbia

2005 Technical University Ilmenau, Germany (summer student program)

INTERNATIONAL COOPERATION PARTNERS

- Axel Pelster, Physics Department and Research Center OPTIMAS, TU Kaiserslautern, Germany
- Tobias Brandes, Institut für Theoretische Physik, TU Berlin, Germany

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LIST OF MAIN PUBLICATIONS

1. M. Radonjić, D. Arsenović, Z. Grujić, and B. M. Jelenković, *Coherent population trapping linewidths for open transitions: Cases of different transverse laser intensity distribution*, Phys. Rev. A 79, 023805 (2009)
2. N. Burić and M. Radonjić, *Uniquely defined geometric phase of an open system*, Phys. Rev. A 80, 014101 (2009)
3. M. Radonjić and B. M. Jelenković, *Stark-chirped rapid adiabatic passage among degenerate-level manifolds*, Phys. Rev. A 80, 043416 (2009)
4. M. M. Mijailović, Z. D. Grujić, M. Radonjić, D. Arsenović, and B. M. Jelenković, *Nonlinear magneto-optical rotation narrowing in vacuum gas cells due to interference between atomic dark states of two spatially separated laser beams*, Phys. Rev. A 80, 053819 (2009)
5. A. J. Krmpot, S. M. Ćuk, S. N. Nikolić, M. Radonjić, D. G. Slavov and B. M. Jelenković, *Dark Hanle resonances from selected segments of the Gaussian laser beam cross-section*, Optics Express 17, 22491 (2009)
6. S. M. Ćuk, M. Radonjić, A. J. Krmpot, S. N. Nikolić, Z. D. Grujić, and B. M. Jelenković, *Influence of laser beam profile on electromagnetically induced absorption*, Phys. Rev. A 82, 063802 (2010)
7. M. Radonjić, S. Prvanović, and N. Burić, *System of classical nonlinear oscillators as a coarse-grained quantum system*, Phys. Rev. A 84, 022103 (2011)
8. A. J. Krmpot, M. Radonjić, S. M. Ćuk, S. N. Nikolić, Z. D. Grujić, and B. M. Jelenković, *Evolution of dark state of an open atomic system in constant intensity laser field*, Phys. Rev. A 84, 043844 (2011)
9. M. Radonjić, S. Prvanović, and N. Burić, *Emergence of classical behavior from the quantum spin*, Phys. Rev. A 85, 022117 (2012)
10. M. Radonjić, S. Prvanović, and N. Burić, *Hybrid quantum-classical models as constrained quantum systems*, Phys. Rev. A 85, 064101 (2012)
11. N. Burić, I. Mendaš, D. B. Popović, M. Radonjić, and S. Prvanović, *Statistical ensembles in the Hamiltonian formulation of hybrid quantum-classical systems*, Phys. Rev. A 86, 034104 (2012)
12. Z. D. Grujić, M. M. Lekić, M. Radonjić, D. Arsenović and B. M. Jelenković, *Ramsey effects in coherent resonances at closed transition Fg = 2 → Fe = 3 of ^{87}Rb*, J. Phys. B 45, 245502 (2012)
13. S. N. Nikolić, M. Radonjić, A. J. Krmpot, N. M. Lučić, B. V. Zlatković and B. M. Jelenković, *Effects of a laser beam profile on Zeeman electromagnetically induced transparency in the Rb buffer gas cell*, J. Phys. B 46, 075501 (2013)
14. N. Burić, D. B. Popović, M. Radonjić, and S. Prvanović, *Hybrid quantum-classical model of quantum measurements*, Phys. Rev. A 87, 054101 (2013)
15. S. M. Ćuk, A. J. Krmpot, M. Radonjić, S. N. Nikolić and B. M. Jelenković, *Influence of a laser beam radial intensity distribution on Zeeman electromagnetically induced transparency line-shapes in the vacuum Rb cell*, J. Phys. B 46, 175501 (2013)
16. A. Maggitti, M. Radonjić and B. M. Jelenković, *Dark-state polaritons in a degenerate two-level system*, Laser Phys. 23, 105202 (2013)
17. N. Burić, D. B. Popović, M. Radonjić, S. Prvanović, *Phase space theory of quantum-classical systems with nonlinear and stochastic dynamics*, Ann. Phys. (NY) 343, 16 (2014)
18. M. Radonjić, D. B. Popović, S. Prvanović, and N. Burić, *Ehrenfest principle and unitary dynamics of quantum-classical systems with general potential interaction*, Phys. Rev. A 89, 024104 (2014)
19. D. Arsenović, N. Burić, D. B. Popović, M. Radonjić, and S. Prvanović, *Cloning in nonlinear Hamiltonian quantum and hybrid mechanics*, Phys. Rev. A 90, 042115 (2014)
20. S. N. Nikolić, M. Radonjić, N. M. Lučić, A. J. Krmpot and B. M. Jelenković, *Transient development of Zeeman electromagnetically induced transparency during propagation of Raman-Ramsey pulses through Rb buffer gas cell*, J. Phys. B 48, 045501 (2015)
21. D. Arsenović, N. Burić, D. B. Popović, M. Radonjić, and S. Prvanović, *Positive-operator-valued measures in the Hamiltonian formulation of quantum mechanics*, Phys. Rev. A 91, 062114 (2015)
22. W. Kopylov, M. Radonjić, T. Brandes, A. Balaž, and A. Pelster, *Dissipative two-mode Tavis-Cummings model with time-delayed feedback control*, Phys. Rev. A 92, 063832 (2015)
23. B. Zlatković, A. J. Krmpot, N. Šibalić, M. Radonjić, and B. M. Jelenković, *Efficient parametric non-degenerate four wave mixing in hot potassium vapor*, Laser Phys. Lett. 13, 015205 (2016)
24. A. Maggitti, M. Radonjić, and B. M. Jelenković, *Dark-polariton bound pairs in the modified Jaynes-Cummings-Hubbard model*, Phys. Rev. A 93, 013835 (2016)
25. B. Dakić and M. Radonjić, *Macroscopic Superpositions as Quantum Ground States*, Phys. Rev. Lett. 119, 090401 (2017)
26. M. Radonjić, W. Kopylov, A. Balaž, and A. Pelster, *Interplay of coherent and dissipative dynamics in condensates of light*, New J. Phys. 20, 055014 (2018)