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Address

Inst. of Theor. Physics
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RNDr. Přemysl Koloreňč, Ph.D.

Education

2002 - 2005, Charles University, Faculty of Mathematics and Physics

Ph.D. in Theoretical Physics, Astronomy and Astrophysics; thesis: *Energy transfers in small molecules*

Oct - Dec 2004, Lehrstuhl für Theoretische Chemie, Universität Bonn

1997 - 2002, Charles University, Faculty of Mathematics and Physics

MSc. in Theoretical Physics; thesis: *Application of generalized R-matrix theory in molecular collisions*

Academic Experience

2008 - present

Lecturer

Institute of Theoretical Physics, Faculty of Mathematics and Physics,
Charles University

Dec 2006 - Nov 2007

Alexander von Humboldt research Fellowship

Theoretische Chemie, Physikalisch-Chemisches Institute,
Universität Heidelberg

Jan 2006 - Nov 2006

Research scientist

Institute of Theoretical Physics, Faculty of Mathematics and Physics,
Charles University

Research Projects

2017 - 2019 GAČR 17-10866S

Properties of autoionizing states in atoms, molecules and clusters

Role: head researcher

2012 - 2015 GAČR P208-12-0521

Non-radiative relaxation processes in ionized atomic and molecular systems

role: head researcher

2010 - 2014 GAČR P208/10/1281

Vibrational and dissociative dynamics of molecular systems in electronic continuum

role: team member

2009 - 2011 GAČR 202/09/0786

Dynamics of non-radiative inter-atomic decay processes in clusters

role: head researcher

Publications

- Number of publications: 48
- Number of citations (WoS, without self citations): 661
- *h*-index: 16

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Talks at International Conferences

- *Frontiers of Physical Sciences with X-ray FELs* workshop, Imperial College London, UK, 2019
- *AttoFEL 2014*, University College London, UK, 2014
- *16th International Symposium on Polarization & Correlation in Electronic & Atomic Collisions*, Dublin, Ireland, 2011
- *Electron Driven Processes at the Molecular Level*, Prague, Czech Republic, 2011
- *International Symposium on Electron-Molecule Collisions and Swarms*, Campinas, Brazil, 2005

Selected papers

1. P Koloreňč and V. Averbukh. *Fano-ADC(2,2) method for electronic decay rates*. J. Chem. Phys., 152(21):214107, 2020.
2. R Bennett, P Votavová, P Koloreňč, T Miteva, N Sisourat, and S Y Buhmann. *Virtual Photon Approximation for Three-Body Interatomic Coulombic Decay*. Phys. Rev. Lett., 122(15):153401, 2019.
3. M A Khokhlova, B Cooper, K Ueda, K C Prince, P Koloreňč, M Y Ivanov, and V Averbukh. *Molecular Auger Interferometry*. Phys. Rev. Lett., 122(23):233001, 2019.
4. T Miteva, S Kazandjian, P Koloreňč, P Votavová, and N Sisourat. *Interatomic Coulombic Decay Mediated by Ultrafast Superexchange Energy Transfer*. Phys. Rev. Lett., 119(8):083403, 2017.
5. P Koloreňč, V Averbukh, R Feifel, and J Eland. *Collective relaxation processes in atoms, molecules and clusters*. J. Phys. B, 49(8):082001, 2016.
6. R Feifel, J Eland, R Squibb, M Mucke, S Zagorodskikh, P Linusson, F Taranelli, P Koloreňč, and V Averbukh. *Ultrafast molecular three-electron Auger decay*. Phys. Rev. Lett., 116:073001, 2016.
7. B Cooper, P Koloreňč, L J Frasinski, V Averbukh, and J P Marangos. *Analysis of a measurement scheme for ultrafast hole dynamics by few femtosecond resolution x-ray pump-probe Auger spectroscopy*. Faraday Discussions, 171:93–111, 2014.
8. K Gokhberg, P Koloreňč, A I Kuleff, and L S Cederbaum. *Site- and energy-selective slow-electron production through intermolecular Coulombic decay*. Nature, 505:661, 2014.
9. N Sisourat, N V Kryzhevoi, P Koloreňč, S Scheit, T Jahnke, and L S Cederbaum. *Ultralong-range energy transfer by interatomic Coulombic decay in an extreme quantum system*. Nature Physics, 6(7):508–511, 2010.

Teaching

Present

- Thermodynamics and Statistical Physics
- Group Theory and its Applications in Physics

Past

- Physics for Mathematicians I & II
- Classical Electrodynamics (Tutorials)
- Applied Mathematics I-IV (Tutorials)

Other pedagogical activities

- Supervisor of *FYKOS – Internet Physics Competition*
- Member of the Promotional Committee of the Faculty of Mathematics and Physics, Charles University