

LIST OF PUBLICATIONS of Prof. Andrey K. BELYAEV

Articles in refereed journals.

83. L. I. Mashonkina, A. K. Belyaev, and J.-R. Shi. Influence of Inelastic Collisions with Hydrogen Atoms on the Formation of Al I and Si I Lines in Stellar Spectra. *Pis'ma v Astronomicheskii Zhurnal*, Vol. 42, No. 6, pp. 408421 (2016) [in Russian]; English translation: *Astronomy Letters*, Vol. 42, No. 6, pp. 366378 (2016).
DOI: 10.1134/S1063773716050078
82. A. K. Belyaev, S. A. Yakovleva, M. Guitou, A. O. Mitrushchenkov, A. Spielfiedel, and N. Feautrier. Model estimates of inelastic calcium-hydrogen collision data for non-LTE stellar atmospheres modeling. *Astronomy and Astrophysics*, vol. **587**, A114 (5 pages) (2016).
DOI: 10.1051/0004-6361/201527651
81. M. Guitou, A. Spielfiedel, D. S. Rodionov, S. A. Yakovleva, A. K. Belyaev, T. Merle, F. Thévenin, and N. Feautrier. Quantum chemistry and nuclear dynamics as diagnostic tools for stellar atmosphere modeling. *Chemical Physics*, vol. **462**, pp. 94-103 (2015).
DOI: 10.1016/j.chemphys.2015.06.003
80. S. A. Yakovleva and A. K. Belyaev. Model Approach to Low-Energy Inelastic Silicon-Hydrogen Collision Processes. *Khimicheskaya Fizika*, vol. 34, pp. 88-91 (2015) [in Russian]; English translation: *Russian Journal of Physical Chemistry B*, vol. **9**, pp. 587-590 (2015).
DOI: 10.1134/S1990793115040338
79. A. K. Belyaev. Excitation cross sections in low-energy hydrogen-helium collisions. *Physical Review A*, vol. **91**, 062709 (4 pages) (2015).
DOI: 10.1103/PhysRevA.91.062709
78. Y. Osorio, K. Lind, P. S. Barklem, A. K. Belyaev, A. Spielfiedel, M. Guitou, and N. Feautrier. Mg line formation in late-type stellar atmospheres - I. The model atom. *Astronomy and Astrophysics*, vol. **579**, A53 (20 pages) (2015).
DOI: 10.1051/0004-6361/201525846
77. A. K. Belyaev, D. S. Rodionov, L. Augustovičová, P. Soldán, and W. P. Kraemer. Full quantum study of non-radiative inelastic processes in lithium-helium ion-atom collisions. *Monthly Notices of the Royal Astronomical Society (MNRAS)*, vol. **449** (3), pp. 3323-3332 (2015).
DOI: 10.1093/mnras/stv391
76. A. K. Belyaev, W. Domcke, C. Lasser, and G. Trigila. Nonadiabatic nuclear dynamics of the ammonia cation studied by surface hopping classical trajectory calculations. *The Journal of Chemical Physics*, vol. **142**, 104307 (10 pages) (2015).
DOI: 10.1063/1.4913962
75. A. K. Belyaev, B. Lepetit, and F. X. Gadéa. Theoretical study of electronic excitation, ion-pair formation, and mutual neutralization in cesium-hydrogen collisions. *Physical Review A*, vol. **90**, 062701 (8 pages) (2014).
DOI: 10.1103/PhysRevA.90.062701

74. A. K. Belyaev, S. A. Yakovleva, and P. S. Barklem. Inelastic silicon-hydrogen collision data for non-LTE applications in stellar atmospheres. *Astronomy and Astrophysics*, vol. **572**, A103 (7 pages) (2014).
DOI: 10.1051/0004-6361/201424714
73. S. A. Yakovleva, A. K. Belyaev, and A. A. Buchachenko. Charge transfer in cold collisions of rubidium atoms with calcium and ytterbium ions. *Journal of Physics: Conference Series*, vol. **572**, 012009 (5 pages) (2014).
DOI: 10.1088/1742-6596/572/1/012009
72. D. S. Rodionov, A. K. Belyaev, M. Guitou, A. Spielfiedel, N. Feautrier, and P. S. Barklem. Inelastic cross sections for low-energy Mg + H collisions. *Journal of Physics: Conference Series*, vol. **572**, 012010 (7 pages) (2014).
DOI:10.1088/1742-6596/572/1/012010
71. S. A. Yakovleva, A. K. Belyaev, and A. A. Buchachenko. Charge Transfer in Cold Collisions of Rubidium Atoms with Calcium and Ytterbium Ions. *University Scientific Journal*, vol. **8**, pp. 13-24 (2014).
70. N. Feautrier, A. Spielfiedel, M. Guitou and A. K. Belyaev. Non-LTE modeling of cold stellar atmospheres. *Société Française d'Astronomie et d'Astrophysique (SF2A), Proceedings SF2A 2014*, pp. 475-478 (2014).
69. A. K. Belyaev, C. Lasser, and G. Trigila. Landau-Zener type surface hopping algorithms. *The Journal of Chemical Physics*, vol. **140**, 224108 (10 pages) (2014).
DOI: 10.1063/1.4882073
68. A. K. Belyaev, L. Augustovičová, P. Soldán, and W. P. Kraemer. Non-radiative inelastic processes in lithium-helium ion-atom collisions. *Astronomy and Astrophysics*, vol. **565**, A106 (5 pages) (2014).
DOI: 10.1051/0004-6361/201423578
67. D. S. Rodionov, A. K. Belyaev, M. Guitou, A. Spielfiedel, N. Feautrier, and P. S. Barklem. Extended Study of Low-energy Inelastic Magnesium-Hydrogen Collisions. *Izvestia of Herzen University*, vol. **165**, pp. 63-71 (2014).
66. A. K. Belyaev. Inelastic aluminium-hydrogen collision data for non-LTE applications in stellar atmospheres. *Astronomy and Astrophysics*, vol. **560**, A60 (4 pages) (2013).
DOI: 10.1051/0004-6361/201322389
65. M. Satta, T. Grassi, F. A. Gianturco, S. A. Yakovleva, and A. K. Belyaev. Reducing Si population in the ISM by charge exchange collisions with He⁺: a quantum modelling of the process. *Monthly Notices of the Royal Astronomical Society (MNRAS)*, vol. **436**, pp. 2722-2733 (2013).
DOI: 10.1093/mnras/stt1771
64. A. K. Belyaev. Model approach for low-energy inelastic atomic collisions and application to Al + H and Al⁺ + H⁻. *Physical Review A*, vol. **88**, 052704 (13 pages) (2013).
DOI: 10.1103/PhysRevA.88.052704

63. M. F. Gelin, A. K. Belyaev, and W. Domcke. Pump-probe spectroscopy with strong pulses as a tool to enhance weak electronic transitions. *Physical Review A*, vol. **87**, 063416 (7 pages) (2013).
DOI: 10.1103/PhysRevA.87.063416
62. E. R. Sayfutyarova, A. A. Buchachenko, S. A. Yakovleva, and A. K. Belyaev. Charge transfer in cold $\text{Yb}^+ + \text{Rb}$ collisions. *Physical Review A*, vol. **87**, 052717 (11 pages) (2013).
DOI: 10.1103/PhysRevA.87.052717
61. T. Merle, F. Thevenin, A. K. Belyaev, M. Guitou, N. Feautrier, A. Spielfiedel, and O. Zatsarinny. Impact of new atomic data for the formation of the Mg I b triplet lines in benchmark stars. *New Advances in Stellar Physics: From Microscopic to Macroscopic Processes (EAS Publications Series)*, vol. **63**, pp. 331-336 (2013).
DOI: 10.1051/eas/1363037
60. A. K. Belyaev, A. Z. Devdariani, V. S. Rybak, and I. A. Zlatkin. Electronic radiative transitions in $\text{He}(2\ ^1,^3\text{S})\text{-Ne}$ weakly bound molecules. Temperature dependences. *Vestnik SPbGU (St. Petersburg State University Bulletin)*, ser. **4**, No. 4, pp. 147-148 (2013).
59. A. K. Belyaev. Inelastic Collision Processes for Formation of Spectral Line Shapes in Stellar Atmospheres. Reprojection method. *Journal of Physics: Conference Series*, vol. **397**, 012052 (6 pages) (2012).
58. M. Guitou, A. K. Belyaev, A. Spielfiedel, N. Feautrier, and P. S. Barklem. Mg-H collision rates for non-LTE determination of stellar atmospheric parameters. *Journal of Physics: Conference Series*, vol. **397**, 012053 (6 pages) (2012).
57. A. K. Belyaev, A. Z. Devdariani, V. S. Rybak, and I. A. Zlatkin. Electronic radiative transition in $\text{He}(2\ ^1,^3\text{S})\text{-Ne}$ weakly bound molecules. Temperature dependence. *Journal of Physics: Conference Series*, vol. **397**, 012038 (6 pages) (2012).
56. J. de Andrés, J. M. Lucas, M. Albertí, J. M. Bofill, A. Belyaev, and A. Aguilar. Crossed molecular beams study of inelastic non-adiabatic processes in gas phase collisions between sodium ions and ZnBr_2 molecules in the 0.10–3.50 keV energy range. *The Journal of Chemical Physics*, vol. **137**, 154202 (12 pages) (2012).
55. P. S. Barklem, A. K. Belyaev, A. Spielfiedel, M. Guitou, and N. Feautrier. Inelastic Mg+H collision data for non-LTE applications in stellar atmospheres. *Astronomy and Astrophysics*, vol. **541**, A80 (4 pages) (2012).
DOI: 10.1051/0004-6361/201219081
54. A. K. Belyaev, S. A. Yakovleva, M. Tacconi, and F. A. Gianturco. Resonances in $\text{Ca}^+ + \text{Rb}$ nonadiabatic collisions at ultralow energies. *Physical Review A*, vol. **85**, 042716 (5 pages) (2012).
DOI: 10.1103/PhysRevA.85.042716
53. A. K. Belyaev, A. I. Toropkin and A. S. Tyukanov. Nonadiabatic transitions in collisions of a negative hydrogen ion with a hydrogen molecule. *Khimicheskaya Fizika*, vol. **31**, pp. 56-60 (2012) [in Russian]; English translation: *Russian Journal of Physical Chemistry B*, vol. **6**, pp. 229-233 (2012).

52. A. K. Belyaev, P. S. Barklem, A. Spielfiedel, M. Guitou, N. Feautrier, D. S. Rodionov, and D. V. Vlasov. Cross sections for low-energy inelastic $\text{Mg} + \text{H}$ and $\text{Mg}^+ + \text{H}^-$ collisions. *Physical Review A*, vol. **85**, 032704 (9 pages) (2012).
DOI: 10.1103/PhysRevA.85.032704
51. A. Spielfiedel, N. Feautrier, M. Guitou and A. K. Belyaev. Collision rates and the determination of atmospheric parameters. *Société Française d'Astronomie et d'Astrophysique (SF2A), Proceedings SF2A 2011*, pp. 283-286 (2011).
50. A. Z. Devdariani, A. K. Belyaev, A. B. Alekseyev, H.-P. Liebermann and R. J. Buenker. Lifetime of weakly bound $\text{He}(2^1S) - \text{Ne}$ molecules. Temperature dependence. *Khimicheskaya Fizika*, vol. **30**, pp. 79-83 (2011) [in Russian]; English translation: *Russian Journal of Physical Chemistry B*, vol. **5**, pp. 952-955 (2011).
49. A. K. Belyaev and O. V. Lebedev. Nonadiabatic nuclear dynamics of atomic collisions based on branching classical trajectories. *Physical Review A*, vol. **84**, 014701 (4 pages) (2011).
48. M. Tacconi, F. A. Gianturco and A. K. Belyaev. Computing charge-exchange cross sections for Ca^+ collisions with Rb at low and ultralow energies. *Physical Chemistry Chemical Physics*, vol. **13**, pp. 19156-19164 (2011).
DOI: 10.1039/C1CP20916G
47. P. S. Barklem, A. K. Belyaev, M. Guitou, N. Feautrier, F. X. Gadea, and A. Spielfiedel. On inelastic hydrogen atom collisions in stellar atmospheres. *Astronomy and Astrophysics*, vol. **530**, A94 (9 pages) (2011).
DOI: 10.1051/0004-6361/201116745
46. K. Lind, M. Asplund, P. S. Barklem, and A. K. Belyaev. Non-LTE calculations for neutral Na in late-type stars using improved atomic data. *Astronomy and Astrophysics*, vol. **528**, A103 (9 pages) (2011).
45. V. D. Vlasov, P. S. Barklem, and A. K. Belyaev. Multichannel cross sections for excitation of sodium atoms in slow collisions with hydrogen atoms. *Optika i Spektroskopiya*, vol. **110**, pp. 355-361 (2011) [in Russian]; English translation: *Optics and Spectroscopy*, vol. **110**, pp. 321-327 (2011).
44. M. Guitou, A. K. Belyaev, P. S. Barklem, A. Spielfiedel, and N. Feautrier. Inelastic $\text{Mg} + \text{H}$ collision processes at low energies. *Journal of Physics B*, vol. **44**, 035202 (8 pages) (2011).
43. A. K. Belyaev. Revised Born-Oppenheimer approach and a reprojection method for inelastic collisions. *Physical Review A*, vol. **82**, 060701 (Rapid Communication) (4 pages) (2010).
DOI: 10.1103/PhysRevA.82.060701
42. A. K. Belyaev, A. Devdariani, M. A. Khodorkovskii, V. Rybak, P. Yu. Serdobintsev, and N. Timofeev. Radiative Transitions And Lifetimes Of Loosely Bound $\text{He}(2^1S)$ -Ne Molecules. Temperature Dependences. *AIP Conference Proceedings*, vol. **1290**, pp. 235-239 (2010).
DOI: 10.1063/1.3517561

41. P. S. Barklem, A. K. Belyaev, A. S. Dickinson, and F. X. Gadea. Inelastic Na + H collision data for non-LTE applications in stellar atmospheres. *Astronomy and Astrophysics*, vol. **519**, A20 (4 pages) (2010).
DOI: 10.1051/0004-6361/201015152
40. A. K. Belyaev, P. S. Barklem, A. S. Dickinson, and F. X. Gadea. Cross sections for low-energy inelastic H + Na collisions. *Physical Review A*, vol. **81**, 032706 (12 pages) (2010).
DOI: 10.1103/PhysRevA.81.032706
39. A. Devdariani, A. K. Belyaev, A. B. Alekseyev, H.-P. Liebermann and R. J. Buenker. Ab initio study of the lifetime of weakly bound He(2 ¹S)-Ne molecules. *Molecular Physics*, vol. **108**, pp. 757-762 (2010).
DOI: 10.1080/00268971003610226
38. A. K. Belyaev. Nonadiabatic effects in inelastic collisional processes. *Physica Scripta*, vol. **80**, 048113 (6 pages) (2009).
DOI: 10.1088/0031-8949/80/04/048113
37. A. K. Belyaev, A. S. Tiukanov and W. Domcke. Generalized diatomics-in-molecule method for polyatomics. *Physica Scripta*, vol. **80**, 048124 (6 pages) (2009).
DOI: 10.1088/0031-8949/80/04/048124
36. A. K. Belyaev, A. S. Tiukanov, A. I. Toropkin, V. K. Ivanov, R. G. Polozkov and A. V. Solov'yov. Photoabsorption of the fullerene C₆₀ and its positive ions. *Physica Scripta*, vol. **80**, 048121 (5 pages) (2009).
DOI: 10.1088/0031-8949/80/04/048121
35. A. K. Belyaev. On the energy dependence of inelastic cross sections. *European Physical Journal D*, vol. **44**, pp. 497-505 (2007).
34. A. K. Belyaev, D. V. Vlasov, and A. M. Kas'yanova. On nonadiabatic transitions in atomic collisions. *Optika i Spektroskopiya*, vol. **103**, pp. 956-960 (2007) [in Russian]; English translation: *Optics and Spectroscopy*, vol. **103**, pp. 920-924 (2007).
33. A. K. Belyaev, V. K. Ivanov, R. G. Polozkov, A. S. Tiukanov, A. V. Solov'yov, and W. Greiner. Photoabsorption of the fullerene ions C₆₀⁺ and C₆₀⁺⁺. *International Journal of Quantum Chemistry*, vol. **107**, pp. 2781-2786 (2007).
32. A. K. Belyaev, A. S. Tiukanov, and W. Domcke. Generalized diatomics-in-molecules method applied to the H₃⁻ anion. *Chemical Physics*, vol. **325**, pp. 378-388 (2006).
31. A. K. Belyaev. Excitation cross sections and the Landau-Zener model. *Herzen University Bulletin (Physical Sciences)*, vol. **6 (15)**, pp. 213-228 (2006) [in Russian].
30. P. S. Barklem, A. K. Belyaev, and M. Asplund. Inelastic H+Li and H⁻+Li⁺ collisions and non-LTE LiI line formation in stellar atmospheres. *Astronomy and Astrophysics*, vol. **409**, pp. L1-L4 (2003).
29. A. K. Belyaev and P. S. Barklem. Cross sections for low-energy inelastic H + Li collisions. *Physical Review A*, vol. **68**, 062703 (9 pages) (2003).

28. W. Wang, A. K. Belyaev, Y. Xu, A. Zhu, C. Xiao, and X. Yang. Observation of H_3^- and D_3^- from dielectric barrier discharge plasmas. *Chemical Physics Letters*, vol. **377**, No 5-6, pp. 512-518 (2003).
27. A. K. Belyaev, A. Dalgarno, and R. McCarroll. The dependence of nonadiabatic couplings on the origin of electron coordinates. *The Journal of Chemical Physics*, vol. **116**, pp. 5395-5400 (2002).
26. A. K. Belyaev, J. Grosser, J. Liévin, and N. Vaeck. Charge exchange in low-energy H, D + C^{4+} collisions with full account of electron translation. *International Journal of Molecular Sciences*, vol. **3**, pp. 190-208 (2002).
25. A. K. Belyaev, On nonadiabatic couplings, coupled channel equations, and the scattering matrix within the standard adiabatic approach. *Russian Journal of Physical Chemistry*, vol. **76**, Sup. 1, pp. S68-S76 (2002).
24. A. K. Belyaev, A. S. Tiukanov, and W. Domcke. Generalized diatomics-in-molecules method for polyatomic anions. *Physical Review A*, vol. **65**, 012508 (15 pages) (2002).
23. A. K. Belyaev, D. Egorova, J. Grosser, and T. Menzel. Electron translation and asymptotic couplings in low-energy atomic collisions. *Physical Review A*, vol. **64**, 052701 (9 pages) (2001).
DOI: 10.1103/PhysRevA.64.052701
22. F. Aguillon, A. K. Belyaev, V. Sidis, and M. Sizun. Time-dependent study of collinear $H^- + H_2(v)$ collisions. *Physical Chemistry and Chemical Physics*, vol. **2**, pp. 3577-3582 (2000).
21. A. K. Belyaev, J. Grosser, J. Hahne, and T. Menzel. Ab initio cross sections for low-energy inelastic H + Na collisions. *Physical Review A*, vol. **60**, pp. 2151-2158 (1999).
20. A. K. Belyaev and A. S. Tiukanov. Decay of negative hydrogen ions in collisions with hydrogen molecules. *Khimicheskaya Fizika*, vol. **18**, N 7, pp. 56-63 (1999) [in Russian]; English translation: *Chemical Physics Reports*, vol. **18**, N 7, pp. 1289-1303 (2000).
19. A. K. Belyaev and A. S. Tiukanov. On nonadiabatic effects in $H^- + H_2$ collisions. *Chemical Physics Letters*, vol. **302**, pp. 65-72 (1999).
18. J. Grosser, T. Menzel, and A. K. Belyaev. Approach to electron translation in low-energy atomic collisions. *Physical Review A*, vol. **59**, pp. 1309-1316 (1999).
17. A. K. Belyaev and A. S. Tiukanov. Diatomics-in-molecules study of the ground and excited states of H_3^- . *Chemical Physics*, vol. **220**, pp. 43-52 (1997).
16. A. K. Belyaev and J. Grosser. Theoretical treatment of inelastic thermal $He^+ + Hg$ collisions. *Journal of Physics B*, vol. **29**, pp. 5843-5855 (1996).
15. A. K. Belyaev and K. S. Stankova. Excitation transfer processes in collisions of metastable atoms with ions. *Optika i Spektroskopia*, vol. **79**, pp. 540-546, 1995 [in Russian]; English translation: *Optics and Spectroscopy*, vol. **79**, pp. 496-502 (1995).

14. A. K. Belyaev, D. T. Colbert, G. C. Groenenboom, and W. H. Miller. State-to-state reaction probabilities for $H^- + H_2, D_2$ collisions. *Chemical Physics Letters*, vol. **209**, pp. 309-314 (1993).
13. A. K. Belyaev. Theoretical investigations of charge exchange with ion excitation in atomic collisions at thermal energies. *Physical Review A*, vol. **48**, pp. 4299-4306 (1993).
12. A. K. Belyaev. Charge exchange with ion excitation in collisions of helium ions with mercury atoms. *Journal of Physics B*, vol. **26**, pp. 3877-3890 (1993).
11. A. K. Belyaev, A. L. Zagrebin, and S. I. Tserkovnyi. Partial cross sections and rate constants of charge transfer processes of helium ions by mercury atoms. *Optika i Spektroskopia*, vol. **70**, pp. 779-783 (1991) [in Russian]; English translation: *Optics and Spectroscopy*, vol. **70**, pp. 453-456 (1991).
10. A. K. Belyaev, A. L. Zagrebin, and S. I. Tserkovnyi. Calculation of the electronically excited quasimolecules $A^{(z-1)+}(nl) + B(^1S_0)$ using the pseudopotential method. *Khimicheskaya Fizika*, vol. **8**, pp. 435-441 (1989) [in Russian]; English translation: *Soviet Journal of Chemical Physics*, vol. **8**, pp. 691-702 (1991).
9. A. K. Belyaev and S. I. Tserkovnyi. Charge exchange with ion excitation in collisions of helium ions with atoms of alkaline earth metals. *Optika i Spektroskopia*, vol. **66**, pp. 778-783 (1989) [in Russian]; English translation: *Optics and Spectroscopy*, vol. **66**, pp. 455-458 (1989).
8. A. K. Belyaev and S. I. Tserkovnyi. Multichannel charge exchange of helium ions on cadmium atoms. *Optika i Spektroskopia*, vol. **63**, pp. 968-972 (1987) [in Russian]; English translation: *Optics and Spectroscopy*, vol. **63**, pp. 569-572 (1987).
7. A. K. Belyaev. Recombining helium-neon plasma. *Zhurnal Tekhnicheskoi Fiziki*, vol. **55**, pp. 524-532 (1985) [in Russian]; English translation: *Soviet Physics - Technical Physics*, vol. **30**, pp. 311-315 (1985).
6. A. K. Belyaev, A. Z. Devdariani, and Yu. N. Sebyakin. Effect of quasibound states on processes of emission and absorption of light in atomic collisions. *Optika i Spektroskopia*, vol. **59**, pp. 505-510 (1985) [in Russian]; English translation: *Optics and Spectroscopy*, vol. **59**, pp. 305-309 (1985).
5. A. K. Belyaev. Excitation transfer in the case of three coupled terms. *Khimicheskaya Fizika*, vol. **4**, pp. 750-758 (1985) [in Russian]; English translation: *Soviet Journal of Chemical Physics*, vol. **4**, pp. 1217-1231 (1987).
4. A. K. Belyaev, A. Z. Devdariani, and A. L. Zagrebin. Temperature dependence of the rate constants for nonadiabatic transitions. The Demkov and Nikitin models. *Optika i Spektroskopia*, vol. **53**, pp. 807-811 (1982) [in Russian]; English translation: *Optics and Spectroscopy*, vol. **53**, pp. 481-484 (1982).
3. A. K. Belyaev and A. Z. Devdariani. $Ne(4s\ ^1P_1, ^3P_0)$ excitation for $He(2\ ^3S) + Ne$ thermal collisions. *Optika i Spektroskopia*, vol. **53**, pp. 610-613 (1982) [in Russian]; English translation: *Optics and Spectroscopy*, vol. **53**, pp. 362-364 (1982).

2. A. K. Belyaev, A. Z. Devdariani, V. A. Kostenko, and Yu. A. Tolmachev. Excitation cross section of Ne($5s\ ^1P_1$) in thermal collisions He($2\ ^1S$) + Ne. *Optika i Spektroskopia*, vol. **49**, pp. 633-637 (1980) [in Russian]; English translation: *Optics and Spectroscopy*, vol. **49**, pp. 345-347 (1980).
1. A. K. Belyaev and A. Z. Devdariani. Temperature dependence of the rate constants for nonadiabatic processes. The Landau-Zener model. *Optika i Spektroskopia*, vol. **45**, pp. 448-453 (1978) [in Russian]; English translation: *Optics and Spectroscopy*, vol. **45**, pp. 253-256 (1978).

Articles in Scientific Paper Collections.

14. I. A. Voronova and A. K. Belyaev. Applications of discrete variable representation functions to investigations of molecules. *Fizicheskij Vestnik (Physical Bulletin)* (Scientific Paper Collection), Herzen University Press, St. Petersburg, issue **6**, pp. 3-7 (2012) [in Russian].
13. O. V. Lebedev and A. K. Belyaev. Nonadiabatic dynamics of atomic collisions on the Na+H example. *Fizicheskij Vestnik (Physical Bulletin)* (Scientific Paper Collection), Herzen University Press, St. Petersburg, issue **5**, pp. 3-7 (2011) [in Russian].
12. S. A. Yakovleva and A. K. Belyaev. Resonances in charge exchange process in cold Ca⁺+Rb collisions. *Fizicheskij Vestnik (Physical Bulletin)* (Scientific Paper Collection), Herzen University Press, St. Petersburg, issue **5**, pp. 8-12 (2011) [in Russian].
11. O. V. Lebedev and A. K. Belyaev. Nonadiabatic dynamics of ammonia cation. *Fizicheskij Vestnik (Physical Bulletin)* (Scientific Paper Collection), Herzen University Press, St. Petersburg, issue **4**, pp. 3-6 (2010) [in Russian].
10. V. S. Rybak, A. Z. Devdariani, and A. K. Belyaev. Temperature dependence of the lifetime of weakly bound He($2\ ^1S$)Ne molecules. *Fizicheskij Vestnik (Physical Bulletin)* (Scientific Paper Collection), Herzen University Press, St. Petersburg, issue **4**, pp. 11-14 (2010) [in Russian].
9. A. K. Belyaev, V. K. Ivanov, R. G. Polozkov, A. V. Solov'yov, A. S. Tiukanov, and A. I. Toropkin. Ionization of the fullerene C₆₀ and its ions at photon absorption. *Fizicheskij Vestnik (Physical Bulletin)* (Scientific Paper Collection), Herzen University Press, St. Petersburg, issue **2**, pp. 3-10 (2008) [in Russian].
8. D. V. Vlasov, A. M. Kas'yanova, and A. K. Belyaev. Model problem of the collision theory within the standard adiabatic approach. *Fizicheskij Vestnik (Physical Bulletin)* (Scientific Paper Collection), Herzen University Press, St. Petersburg, issue **1**, pp. 32-36 (2007) [in Russian].
7. A. I. Toropkin, A. S. Tiukanov, A. K. Belyaev, V. K. Ivanov, R. G. Polozkov, A. V. Solov'yov, and W. Greiner. Electronic structure and photoionization cross section calculations for the fullerene C₆₀ and its ions. *Fizicheskij Vestnik (Physical Bulletin)* (Scientific Paper Collection), Herzen University Press, St. Petersburg, issue **1**, pp. 3-8 (2007) [in Russian].
6. T. A. Vinogradova and A. K. Belyaev. Photoabsorbption of the molecular ion O₂⁺. *Physics in School and University* (International Scientific Paper Collection), Herzen University Press, St. Petersburg, issue **5**, pp. 17-22 (2006) [in Russian].

5. D. V. Vlasov, P. S. Barklem, and A. K. Belyaev. Nonadiabatic transitions at slow collisions of hydrogen and sodium atoms. *Physics in School and University* (International Scientific Paper Collection), Herzen University Press, St. Petersburg, issue **5**, pp. 3-11 (2006) [in Russian].
4. A. K. Belyaev, V. N. Ostrovskii, and Yu. A. Tolmachev. Nonresonance charge exchange with excitation at thermal energies. In: *"Physics of Electronic and Atomic Collisions"*, Leningrad, pp. 55-68 (1989) [in Russian].
3. A. K. Belyaev, N. V. Zakrevskii, G. A. Luk'yanov, and S. I. Tserkovnyi. Calculations of helium levels populations in a recombining plasma. In: *"Rarefied Gas Dynamics"*, Leningrad, pp. 231-243 (1983) [in Russian].
2. A. K. Belyaev and A. Z. Devdariani. Determinations of quasimolecular curves parameters and energy dependence of cross sections from temperature dependence of rate constants for nonadiabatic reactions. In: *"Physics of Electronic and Atomic Collisions"*, Tbilisi, pp. 107-112 (1982) [in Russian].
1. A. K. Belyaev, A. Z. Devdariani, and V. A. Kruglevskii. Cross sections of Ne($4s\ ^1P_1, ^3P_0$) and Ne($5s\ ^1P_1$) excitation in thermal collisions He($2\ ^3,^1S$) + Ne. In: *"Processes of energy transfer in metal steams"*, Riga, pp. 131-142 (1981) [in Russian].

Theses.

2. A. K. Belyaev. New approaches in theory of slow atomic and molecular collisions at investigations of rearrangement particles processes (*D.Sc. thesis*). St. Petersburg State University, St. Petersburg, Russia, 294 p. (2000) [in Russian].
1. A. K. Belyaev. Temperature dependence of the rate constants for nonadiabatic processes in atomic collisions and excitation processes in helium-neon laser (*Ph.D. thesis*). Leningrad State University, Leningrad, 158 p. (1983) [in Russian].