CURRICULUM VITAE

Name: **VALERIY INNOKENTIEVICH PEREVALOV**

Born: November 3, 1951, Tomsk region, USSR

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V.I. Perevalov is the head of the Laboratory of Theoretical Spectroscopy of Siberian Branch of Russian Academy of Sciences, author of about 90 papers in the peer reviewed journals, invited speaker of four international conferences (Prague 1992, 2008; Rabat 2005, Brussels 2012), supervisor of two PhD theses, one of which is a co-tutelle with Pierre et Marie Curie University (Paris, France).

Education

Tomsk State University, June 1974 (with distinction)

Postgraduate School of Tomsk State University, Doctor of Physics and Mathematics, February, 1982 (Optics)

Thesis title: Theoretical investigation of accidental vibration-rotation resonances in the molecular spectra

Second thesis in the field of Physics and Mathematics, Institute of Atmospheric Optics, June, 1996 (Optics)

Thesis title: Method of Effective Operators in the Theory of Molecular Spectra

Professional experience

1974-Present: Institute of Atmospheric Optics, Siberian Branch of Russian Academy of Sciences, Tomsk, Junior Scientist, Senior Scientist, Chief of Research group, and now Director of Laboratory of Theoretical Spectroscopy.

Research interests

Molecular spectroscopy
Atmospheric optics
Astrophysics
Nonlinear optics

International cooperation

Invited professor at Bourgogne University (Dijon, France, 1991, 1 month)
Invited professor at Pierre et Marie Curie Université (Paris, France, 1992, 1 month)
Invited professor at Pierre et Marie Curie Université (Paris, France, 1999, 1 month)
Invited professor at Pierre et Marie Curie Université (Paris, France, 2004, 1 month)
Invited professor at Pierre et Marie Curie Université (Paris, France, 2007, 1 month)

Assotiated professor at Pierre et Marie Curie Université (Paris, France, 1997, 4 months)

Invited professor at Shanghai Institute for Advanced Studies (Shanghai, China, 2005, 2 months)

Invited professor at University of Science and Technology of China (Hefei, China, 2007, 1 months)

Invited professor at University of Science and Technology of China (Hefei, China, 2008, 1 months)

Invited professor at Université Paris-est Marne la Vallée (Marne la Vallée, France, 2009, 1 months)

Invited professor at Université du Littoral Côté d'Opale (Dunkerque, France, 2009, 1 month)

Invited professor at Université Paris-est Marne la Vallée (Marne la Vallée, France, 2010, 2 months)

Invited professor at University of Science and Technology of China (Hefei, China, 2010, 1 months)

Invited professor at Université de Franche-Compte (Besanson, France, 2011, 2 months)

International scientific projects

2005-2007 - Principal investigator from the Russian side of the CNRS-RFBR PICS project No 05-05-22001 "Intensities in rovibrational spectra of atmospheric molecules: experiment, global approach and isotopic studies".

2007-2008-Principal investigator from the Russian side of the NSFC (China)-RFBR project No 06-05-39016 "Joint study on the infrared spectroscopy of some atmospheric molecules including CO2".

2006-2008 - Principal investigator from the Russian side of the IAO-GOSAT (Japan) project "Assignment and retrieval of the spectral line parameters of methane molecule in the region 5500-6200 cm^{-1}".

2009-2012 - Principal investigator from the Russian side of the projet pour un groupement de recherche international France-Russie-Chine "Spectroscopie d'absorption de molécules d'intérêt atmospherique et planétologique: de l'innovation instrumentale à la modélisation globale et aux bases de données".

2009-2012 – Principal investigator from the side of Institute of Atmospheric Optics of the project within framework of European Seventh Framework Program "Virtual Atomic and Molecular Data Centre".

Experience in the organization of the scientific meetings

1991-2012 – the member of the Organizing Committee of X^{th} – $XVII^{th}$ International Symposiums on High Resolution Molecular Spectroscopy (HighRus).

2000-2006 – the member of the International Steering Committee of 17^{th}-19^{th} International Conferences on High Resolution Molecular Spectroscopy (Prague, Czech Republic).

2006 – 2013 – the member of the Scientific Committee of the 20^{th} – 23^{d} Colloquiums on High Resolution Molecular Spectroscopy (Dijon - France, Naples - Italy, Dijon- France, Budapest - Hungary).

2012 - the member of the Scientific Committee of ASA – HITRAN meeting (Reims-France).

LIST OF PUBLICATIONS OF Dr. V.I. PEREVALOV

Book

Zhilinskii B.I., **Perevalov V.I.**, Tyuterev Vl.G. Method of irreduceble tensor operators in the theory of molecular spectra. Novosibirsk: Nauka, 1987, 236p.

Articles

1. Rothman, L.S., Gordon, I.E., Barbe, A., Benner, D.Chris, Bernath, P.F., Birk, M., Boudon, V., Brown, L.R., Campargue, A., Champion, J.-P. Chance, K., Coudert, L.H., Dana, V., Devi, V.M., Fally, S., Flaud, J.-M., Gamache, R.R., Goldman, A., Jacquemart, D., Kleiner, I., Lacome, N., Lafferty, W.J., Mandin, J.-Y., Massie, S.T., Mikhailenko, S.N. Miller, C.E., Moazzen-Ahmadi, N., Naumenko, O.V., Nikitin, A.V., Orphal, J., **Perevalov, V.I**., Perrin, A., Predoi-Cross, A., Rinsland, C.P., Rotger, M., Simecková, M., Smith, M.A.H., Sung, K., Tashkun, S.A., Tennyson, J., Toth, R.A., Vandaele, A.C., Vander Auwera, J. The HITRAN 2008 molecular spectroscopic database. J. Quant. Spectrosc. Radiat. Transfer, 2009 v.110, p.p. 654-668.
2. **V.I. Perevalov**, S.A. Tashkun, R.V. Kochanov, A.-W. Liu, A. Campargue, Global modeling of the $^{14}N_2{}^{16}O$ line positions within the framework of the polyad model of effective Hamiltonian // JQSRT, 113, 1004-1012 (2012).
3. O.M. Lyulin, A.V. Nikitin, **V.I. Perevalov**, Isamu Morino, Tatsuya Yokota, Ryoichi Kumazawa, Takeshi Watanabe. Measurements of N_2- and O_2-broadening and shifting parameters of methane spectral lines in the 5550-6236 cm^{-1} region. J. Quant. Spectrosc. Radiat. Transfer, 2009, v.110, p.p. 654-668.
4. Lyulin O.M., **Perevalov V.I.**, Morino I., Yokota T., Kumazawa R., Watanabe T. Measurements of self-broadening and self-induced pressure-shift parameters of methane spectral lines in the 5556 – 6166 cm^{-1} // JQSRT. 2011. V**.112. C.**531-539.
5. Y. Lu, D. Mondelain, A.W. Liu, **V.I. Perevalov**, S. Kassi, A. Campargue, High sensitivity CW-cavity ring down spectroscopy of N_2O between 6950 and 7653 cm^{-1} (1.44 – 1.31μm): I. Line positions. // JQSRT, 113, 749-762 (2012).
6. D. Jacquemart, F. Gueye, O.M. Lyulin, E.V. Karlovets, D. Baron, **V.I. Perevalov**, Infrared spectroscopy of CO_2 isotopologues from 2200 to 7000 cm^{-1}: I – characterizing experimental uncertainties of positions and intensities // JQSRT, 113, 961-975 (2012).
7. O.M. Lyulin, E.V. Karlovets, D. Jacquemart, Y. Lu, A.W. Liu, **V.I. Perevalov**, Infrared spectroscopy of ^{17}O- and ^{18}O-enriched carbon dioxide in the 1700 – 8300 cm^{-1} wavenumber region // JQSRT, 113, 2167-2181 (2012).
8. Y. Lu, A.W. Liu, H. Pan, X.F. Li, **V.I. Perevalov**, S.A. Tashkun, S.M. Hu, High sensitivity cavity ring down spectroscopy of $^{13}C^{16}O_2$ overtone bands near 806 nm // JQSRT, 2197-2204 (2012).
9. Milloud R., **Perevalov V.I.**, Tashkun S.A., Campargue A. Rotational analysis of $6\nu_3$ and $6\ \nu_3+\nu_2-\nu_2$ bands of $^{14}N_2{}^{16}O$ from ICLAS spectra between 12760 and 12900 cm^{-1} // JQSRT. 2011. V.112. C.553-557.
10. Tashkun S.A., **Perevalov V.I.** CDSD–4000: High-resolution, high-temperature carbon dioxide spectroscopic databank // JQSRT. 2011. V.112**. C.**1403-1410.
11. Jacquinet-Husson N., Crepeau L., Armante R., Boutammine C., Chedin A., Scott N.A., Crevoisier C., Crevoisier C., Capelle V., Boone C., Poulet-Crovisier N., Barbe

A., Campargue A., Chris Benner D., Benilan Y.**,** Bézard B., Boudon V., Brown L.R., Coudert L.H., Coustenis A., Dana V., Devi V.M., Fally S., Fayt A., Flaud J.-M., Goldman A., Herman M., Harris G.J., Jacquemart D., Jolly A., Kleiner I., Kleinböhl A., Kwabia-Tchana F., Lavrentieva N., Lacome N., Lyulin O.M., Mandin J.-Y., Maki A., Mikhailenko S., Miller C.E., Mishina T., Moazzen-Ahmadi N., Müller H.S.P., Nikitin A**.**, Orphal J., **Perevalov V.**, Perrin A., Petkie D.T., Predoi-Cross A., Rinsland C.P., Remedios J., Rotger M., Smith M.A.H., Sung K., Tashkun S., Tennyson J., Toth R.A., Vandaele A.C., Vander Auwera J., Xu L.-H. The 2009 edition of the GEISA spectroscopic database // JQSRT. 2011. V.112. C.2395-2445.

12. Lyulin O.M., **Perevalov V.I.** Effective dipole moment parameters of $^{12}C_2H_2$ for the 100, 7.7, 1.4, 1.3, 1.2 and 1.0 m regions // J. Mol. Spectrosc. 2011. V.266. C.75-80.
13. Liu A.W., Kassi S., **Perevalov V.I.**, Tashkun S.A., Campargue A. High sensitivity cw-cavity ring down spectroscopy of N_2O near 1.28 μm // J. Mol. Spectrosc. 2011. V.267**.** C.191-199.
14. Song K.F., Kassi S., Tashkun S.A., **Perevalov V.I.**, Campargue A. High sensitivity CW-cavity ring down spectroscopy of $^{12}CO_2$ near 1.35 μm (II): New observations and line intensities modeling // JQSRT. 2010. V.111. №3. P.332-344.
15. Lyulin O.M., Jacquemart D., Lacome N., Tashkun S.A., **Perevalov V.I.** Line parameters of $^{15}N_2{}^{16}O$ from Fourier transform measurements in the 5800–7600 cm^{-1} region and global fitting of line positions from 1000 to 7600 cm^{-1} // JQSRT. 2010. V.11. №3. P.345-356.
16. Campargue A., Song K.F., Mouton N., **Perevalov V.I.**, Kassi S. High sensitivity CW-cavity ring down spectroscopy of five $^{13}CO_2$ isotopologues of carbon dioxide in the 1.26–1.44 μm region (I): Line positions // JQSRT. 2010. V.111. №5. P.659-674.
17. Tashkun S.A., **Perevalov V.I.**, Kochanov R.V., Liu A.-W., Hu S.-M. Global fitting of $^{14}N^{15}N^{16}O$ and $^{15}N^{14}N^{16}O$ vibrational-rotational line positions using the effective Hamiltonian approach // JQSRT. 2010. V.111. №9. P.1089-1105.
18. Rothman L.S., Gordon I.E., Barber R.J., Dothe H., Gamache R.R., Goldman A., **Perevalov V.I.**, Tashkun S.A., Tennyson J. HITEMP, the high-temperature molecular spectroscopic database // JQSRT. 2010. V.111. №15. P.2139-2150.
19. Dubernet M.L., Boudon V., Culhane J.L., Dimitrijevic M.S., Fazliev A.Z., Joblin C., Kupka F., Leto G., Le Sidaner P., Loboda P.A., Mason H.E., Mason N.J., Mendoza C., Mulas G., Millar T.J., Nuñez L.A., **Perevalov V.I.**, Piskunov N., Ralchenko Y., Rixon G., Rothman L.S., Roueff E., Ryabchikova T.A., Ryabtsev A., Sahal-Bréchot S., Schmitt B., Schlemmer S., Tennyson J., Tyuterev V.G., Walton N.A., Wakelam V., Zeippen C.J. Virtual atomic and molecular data centre // JQSRT. 2010. V.111. №15. P.2151-2159.
20. Nikitin A.V., Lyulin O.M., Mikhailenko S.N., **Perevalov V.I.**, Filippov N.N., Grigoriev I.M., Morino I., Yokota T., Kumazawa R., Watanabe T. GOSAT-2009 methane spectral line list in the 5550 – 6236 cm^{-1} region // JQSRT. 2010. V.111. №15. P.2211-2224.
21. Song K.F., Gao B., Liu A.-W., **Perevalov V.I**., Tashkun S.A., Hu. S.-M. Cavity ring-down spectroscopy of the $6\nu_3$ bands of ^{15}N substituted N_2O // JQSRT. 2010. V.111. №16. P.2370-2381.
22. **Perevalov V.I.**, Tashkun S.A., Song K.F., Campargue A. Global modeling of $^{16}O^{12}C^{17}O$ and $^{16}O^{12}C^{18}O$ absolute line intensities in the 1.35 μm region // J. Mol. Spectrosc. 2010. V.263. №2. P.183-185.

23. Liu A.W., Kassi S., **Perevalov V.I.**, Hu S.M., Campargue A. High sensitivity CW-cavity ring down spectroscopy of N_2O near 1.5 μm (III). J. Mol. Spectrosc. 2009, v. 254, p.p. 20-27.
24. D. Jacquemart, N. Lacome, J.-Y. Mandin, V. Dana, H. Tran, F.K. Gueye, O.M. Lyulin, **V.I. Perevalov**, L. Regalia-Jarlot. The IR spectrum of $^{12}C_2H_2$: Line intensity measurements in the 1.4 μm region and update of the databases. J. Quant. Spectrosc. Radiat. Transfer, 2009 v.110, p.p. 717-732.
25. Tashkun S.A., **Perevalov V.I**., Teffo J.-L., Bykov A.D., Lavrentieva N.N. CDSD-1000, The High-Temperature Carbon Dioxide Spectroscopic Databank, J. Quant. Spectrosc. Radiat. Transfer, 2003, v.82, p.165-196.
26. Jacquinet-Husson N., Scott N.A., A. Chédin, K. Garceran, R. Armante, A.A. Chursin, A. Barbe, M. Birk, L.R. Brown, C. Camy-Peyret, C. Claveau, C. Clerbaux, P.F. Coheur, V. Dana, L. Daumont, M.R. Debacker-Barilly, J.M. Flaud, A. Goldman, A. Hamdouni, M. Hess, D. Jacquemart, K. Köpke, J.Y. Mandin, S. Massie, S. Mikhailenko, V. Nemtchinov, A. Nikitin, D. Newnham, A.Perrin, V.I.Perevalov, L. Régalia-Jarlot, A. Rublev, F. Schreier, L. Schult, K.M. Smith, S.A. Tashkun, J.L. Teffo, R.A. Toth, Vl.G. Tyuterev, J. Vander Auwera, P. Varanasi, G. Wagner, Mikhailenko S.N., Nikitin A.V., **Perevalov V.I**., Tashkun S.A. The 2003 edition of the GEISA/IASI spectroscopic database, JQSRT. 2005. V**.**95. P.429–467.
27. Lyulin O.M., Jacquemart D., Lacome N., **Perevalov V.I**., Mandin J.-Y. et al. Line parameters of acetylene in the 1.9 and 1.7 μm spectral regions, JQSRT 109 (2008) 1856-1874.
28. Perevalov B.V., Deleporte T., Liu A.W., Kassi S., Campargue A., Vander Auwera J., Tashkun S., **Perevalov V.I.** Global modeling of $^{13}C^{16}O_2$ absolute line intensities from CW-CRDS and FTS measurements in the 1.6 and 2.0 μm regions, JQSRT 109 (2008) 2009-2026.
29. Wilquet V., Mahieux A., Vandaele A.C., **Perevalov V.I**., Tashkun S.A., Fedorova A., Korablev O., Bertaux J.L. Line parameters for the 01111-00001 band of $^{12}C^{16}O^{18}O$ from SOIR measurements of the Venus atmosphere, JQSRT 109 (2008) 895-905.
30. Wang L., **Perevalov V.I**., Tashkun S.A., Song K.F., Hu S.M. Fourier transform spectroscopy of $^{12}C^{18}O_2$ and $^{16}O^{12}C^{18}O$ in the 3800-8500 cm^{-1} region and global modeling of the absorption spectra of $^{12}C^{18}O_2$, , J. Mol. Spectrosc. 247 (2008) 64-75.
31. H.Y. Ni, K.F. Song, **V.I. Perevalov**, S.A. Tashkun, A.W. Liu, L. Wang, S.M. Hu. Fourier-transform spectroscopy of $^{14}N^{15}N^{16}O$ in the 3800-9000 cm^{-1} region and global modeling of its absorption spectra, J. Mol. Spectrosc. 248 (2008) 41-60.
32. Perevalov B.V., Kassi S., Romanini D., **Perevalov V.I**., Tashkun S.A., Campargue A. Global effective Hamiltonians of $^{16}O^{13}C^{17}O$ and $^{16}O^{13}C^{18}O$ improved from CW–CRDS observations in the 5900–7000 cm^{-1} region, J. Mol. Spectrosc. 2007. V.241. P.90-100.
33. Liu A.W., Kassi S., Malara P., Romanini D., **Perevalov V.I**., Tashkun S.A., Hu S.-M., Campargue A. High sensitivity CW-cavity ring down spectroscopy of N_2O near 1.5 μm (I), J. Mol. Spectrosc. 2007. V.244. P. 33-47.
34. Liu A.W., Kassi S., **Perevalov V.I**., Tashkun S.A., Campargue A. High sensitivity CW-cavity ring down spectroscopy of N_2O near 1.5 μm (II), J. Mol. Spectrosc. 2007. V.244. P.48-62.

35. Jacquemart D., Lacome N., Mandin J.-Y., Dana V., Lyulin O.M., **Perevalov V.I**. Multispectrum fitting of line parameters for $^{12}C_2H_2$ in the 3.8-μm spectral region, JQSRT. 2007. V.103. P.478-495.
36. Lyulin O.M., **Perevalov V.I**., Mandin J.-Y., Dana V., Gueye F., Thomas X., Von der Heyden P., Décatoire D., Régalia-Jarlot L., Jacquemart D., Lacome N. Line intensities of acetylene: Measurements in the 2.5-μm spectral region and global modeling in the Δp=4 and 6 series, JQSRT. 2007. V.103. P.496-523.
37. Lyulin O.M., **Perevalov V.I**., Gueye F., Mandin J.-Y., Dana V., Thomas X., Von der Heyden P., Régalia-Jarlot L., Barbe A. Line positions and intensities of acetylene in the 2.2-μm region, JQSRT. 2007. V.104. P.133-154.
38. Daumont L., Vander Auwera J., Teffo J.-L., **Perevalov V.I**., Tashkun S.A. Line intensity measurements in $^{14}N_2{}^{16}O$ and their treatment using the effective dipole moment approach. II. The 5400 – 11 000 cm^{-1} region, JQSRT. 2007. V.104. P.342-356.
39. Wang L., **Perevalov V.I**., Tashkun S.A., Gao B., Hao L.-Y., Hu S.-M. Fourier transform spectroscopy of N_2O weak overtone transitions in the 1-2 μm region, J. Mol. Spectrosc. 2006. V.237**.** P.129-136.
40. Perevalov B.V., Kassi S., Romanini D., **Perevalov V.I**., Tashkun S.A., Campargue A. CW-cavity ringdown spectroscopy of carbon dioxide isotopologues near 1.5 μm, J. Mol. Spectrosc. 2006. V.238. P.241-255.
41. Lyulin O.M., **Perevalov V.I**., Mandin J.-Y., Dana V., Jacquemart D., Régalia-Jarlot L., Barbe A. Line intensities of acetylene in the 3-μm region: New measurements of weak hot bands and global fitting, JQSRT. 2006. V.97. P.81–98.
42. **Perevalov V.I**., Tashkun S.A., Lyulin O.M., Teffo J.-L. Global modeling of high-resolution spectra of linear molecules CO_2, N_2O and C_2H_2, A. Perrin et al. (eds). Remote Sensing of the Atmosphere for Environmental Security. Springer. 2006. P.139-159.
43. Tashkun S.A., **Perevalov V.I**., Teffo J.-L. CDSD-296, the high-precision carbon dioxide spectroscopic databank: version for atmospheric applications, A. Perrin et al. (eds). Remote Sensing of the Atmosphere for Environmental Security. Springer. 2006. P.161-169.
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45. Ding Y., Campargue A., Bertseva E., Tashkun S.A., **Perevalov V.I**. Highly sensitive absorption spectroscopy of carbon dioxide by ICLAS–VeCSEL between 8800 and 9530 cm^{-1}, J. Mol. Spectrosc. 2005. V.231. ¹2. P.117–123.
46. Wang L., **Perevalov V.I**., Tashkun S.A., Liu A.-W., Hu S.-M. Absorption spectra of $^{12}C^{16}O_2$ and $^{13}C^{16}O_2$ near 1.05 μm, J. Mol. Spectrosc**.** 2005. V.233. ¹2. P. 297–300.
47. Wang L., **Perevalov V.I**., Tashkun S.A., Ding Y., Hu S.-M Absolute line intensities of $^{13}C^{16}O_2$ in the 4200 – 8500 cm^{-1} region, J. Mol. Spectrosc. 2005. V.234. ¹1 P.84–92.
48. Vander Auwera J., Claveu C., Teffo J.-L., Tashkun S.A., **Perevalov V.I**. Absolute line intensities of $^{13}C^{16}O_2$ in the 3090-3920 cm^{-1} region // J. Mol. Spectrosc. 2005. V.235. ¹1. P.77–83.
49. Ding Y., Macko P., Romanini D., **Perevalov V.I**., Tashkun S.A., Teffo J.L., Hu S.M., Campargue A. High Sensitivity *cw*-Cavity Ring Down and Fourier Transform Absorption Spectroscopies of $^{13}CO_2$, J. Mol. Spectrosc. 2004. V. 226. P.146-160.

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51. **Perevalov V.I**., Lyulin O.M., Jacquemart D., Claveau C., Teffo J.-L., Dana V., Mandin J.-Y., Valentin A. Global fitting of line intensities of acetylene molecule in the infrared using the effective operator approach, J.Mol.Spectrosc. 2003, v.218, p.180-189.
52. Ding Y., **Perevalov V.I**., Tashkun S.A., Teffo J.-L., Hu S., Bertseva E., Campargue A. Weak overtone transitions of N_2O around 1.05 μm by ICLAS-VECSEL, J.Mol.Spectrosc., 2003, v.220, p.80-86.
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55. Teffo J.L., Daumont L., Claveau C., Valentin A., Tashkun S.A., and **Perevalov V. I**. Infrared spectra of the $^{16}O^{12}C^{17}O$ and $^{16}O^{12}C^{18}O$ species of carbon dioxide: the region 500 – 1500 cm^{-1} region, J. Mol. Spectrosc., 2002, v. 213**,** p.145-152.
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65. Tyuterev Vl.G., Champion J.-P., Pierre G, **Perevalov V.I**. Parameters of reduced Hamiltonian and invariant parameters of interacting E and F fundamentals of tetrahedral molecules: ν_2 and ν_4 bands of CH_4 and SiH_4, J. Mol. Spectrosc., 1986, v.120, p.49-78.

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