

NIKOLAY I. DYAUR

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EDUCATION:

Ph.D., 1986, Geophysics (Physics and Mathematics), Institute of Physics of the Earth,
Russian (USSR) Academy of Sciences, Moscow.

M.S., 1975 Geology and geological exploration of mineral deposits,
Dnepropetrovsk Institute of mines, Ukraine, Dnepropetrovsk
Present name: National mining University

RESEARCH INTEREST: Rock Physics modeling in Geosciences. Seismic and microseismic physical modeling. Wave propagation in fractured, anisotropic medium. Physical properties of rocks and materials under various conditions, including pressure, stress, and temperature. Development of experimental study of rocks.

SOCIETY AFFILIATIONS

Society of Exploration Geophysicists
Geophysical Society of Houston

LANGUAGES: English, Russian, Ukrainian

PROFESSIONAL EXPERIENCE:

| | | |
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| 2008 - Present Time | Research Scientist, | University of Houston, USA |
| 2006 – 2008 | Research Associate, | University of Oklahoma, USA |
| 1997 - Present Time | Senior Research Scientist, | Schmidt Institute of Physics of the Earth Russian Academy of Sciences, Moscow, Russia |
| 1995 – 1997 | Senior Research Scientist, part time, | Schmidt Institute of Physics of the Earth Russian Academy of Sciences, Moscow, Russia |
| 1982 – 1993 | Research Scientist | Institute of Geology and Development of Fossil Fuels Ministry of Oil Industry and (USSR) Russian Academy of Sciences, Moscow, Russia, |
| 1980 – 1982 | Principal Engineer | All-Union research institute for factory technology of modular ferro-concrete designs and products «VNIJjelezebeton» Ministry of Building materials Industry, Moscow, Russia |
| 1977 - 1980 | Research Scientist | Institute of Geology and Development of Fossil Fuels Ministry of Oil Industry and USSR Academy of Sciences, Moscow, Russia |
| 1975- 1977 | Senior Engineer | State Institute of Mining and Chemical Raw Materials, Ministry of Chemical Industry, Lubertsy, Moscow region, Russia. |

Peer-Reviewed publications:

1. L. Huang, R.R. Stewart, S. Sil, **N. Dyaur**, 2015, Fluid substitution effects on seismic anisotropy. Journal of Geophysical Research: Solid Earth 120 (2), 850-863.

2. Bode Omoboya, J.J.S.de Figueiredo, **Nikolay Dyaur**, and Robert R. Stewart, 2015, Experimental study of the influence of fluids on seismic azimuthal anisotropy. *Journal of Petroleum Science and Engineering* 130, 46–54.
3. L.K. Santos, J.J.S. de Figueiredo, B. Omoboya, J. Schleicher, R.R. Stewart, and **N. Dyaur**, 2015, On the source-frequency dependence of fracture-orientation estimates from shear-wave transmission experiments. *Journal of Applied Geophysics* 114, 81-100.
4. Robert R. Stewart, Fabiola Ruiz, Julia Willner, **Nikolay Dyaur**, and Long Huang, 2015, Exploration geophysics at the University of Houston. The shale trail and other unconventional voyages. Recorder, official publication of Canadian Society of Exploration Geophysicists, Volume 40, N 07, 32-37.
5. Kefei Lu, Yasser M. Metwally, **Nikolay Dyaur**, and Evgeny Chesnokov, 2015, Barnett shale velocity and permeability measurement. *.journals.ke-i.org/old/index.php/qpr/article/view/105*, Quarterly Physics Review, N 2, 23.
6. Mehdi E. Far, Jose S. de Figueiredo, Robert R. Stewart, John P. Castagna, De-Hua Han, and **Nikolay Dyaur**, 2014, Measurements of seismic anisotropy and fracture compliances in synthetic fractured media. *Geophysical Journal International*, vol.197 (3), 1845-1857.
7. Robert R. Stewart, **Nikolay Dyaur**, Bode Omoboya, J. J. S. de Figueiredo, Mark Willis, and Samik Sil, 2013, Physical modeling of anisotropic domains: Ultrasonic imaging of laser-etched fractures in glass. *Geophysics*, Vol.78, No 1, D11-D19.
8. J. J. S. de Figueiredo, J. Schleicher, R. R. Stewart, **N. Dayur**, B. Omoboya, R. Wiley, A. William, 2013, Shear wave anisotropy from aligned inclusions: ultrasonic frequency dependence of velocity and attenuation. *Geophysical Journal International*, vol. 193:1, 475-488.
9. De Figueiredo, J. J. S. Schleicher, J., Stewart, R. R., **Dyaur, N.**, 2012, Estimating fracture orientation from elastic-wave propagation: An ultrasonic experimental approach. *Journal of Geophysical Research*, v. 117, 1-13.
10. I.O. Bayuk, **N.I. Dyaur**, 2012, Reconstructing the shale stiffness tensor from limited number of measured velocities with the help of effective medium theory.(in Russian) *Tekhnologii seismorazvedki (Seismic Technologies)*, N 4, 15-21.
11. Rebetsky, Yu. L., Lementueva, R.A., **Dyaur, N.I.**, and Mikhaylova, A.V., 2005, Subordination of Microstructure Deformations and Brittle Macrodestructions, 2005, *Doclady of the Russian Academy of Sciences*, v.403, N 2, 253-257.
12. Petrov, V.A., Poluektov, V.V., Zharikov, A.V., Nasimov, R.M., **Diaur, N.I.**, Terentiev, V.A., Burmistrov, A.A., Petrunin, G.I., Popov, V.G., Sibgatulin, V.G., Lind, E.N., Grafchikov, A.A., Shmonov, V.M., 2005, Microstructure, filtration, elastic and thermal properties of granite rock samples: Implication to the HLW disposal. In: Harvey, P.K., Brewer, T.S., Pezard, P.A. & Petrov, V.A. (eds). 2005. *Petrophysical Properties of Crystalline Rocks*. Geological Society, London, Special Publication, 240, 237-253.
13. Saltykovsky, A.Ja., **Dyaur, N.I.**, Nasimov, R.M., Frolova, Ju.V., Ladigin, V.M., Genshaft, Ju.S., 2004, Density of hydrothermally altered rocks of volcano Baransky (islaland Iturup) after high P-T impact, (in Russian): *Izvestiya of Russian Academy of Sciences, Physics of the solid Earth*, N4, 347-351.
14. Petrov, V.A., Poluektov, V.V., Zharikov, A.V., Velichkin, V.I., Nasimov, R.M., **Diaur, N.I.**, Terentiev, V.A., Shmonov, V.M., Vitovtova, V.M. Deformation of metavolcanics in the Karachay Lake area, Southern Urals: Petrophysical and mineral-chemical aspects. In: Harvey, P.K., Brewer, T.S., Pezard, P.A. & Petrov, V.A. (eds). *Petrophysical Properties of Crystalline Rocks*. Geological Society, London, Special Publication, 240. 307-322.
15. Laverov, N.P., Petrov, V.A., Velichkin. V.I., Poluektov, V.V., Nasimov, R.M., **Dyaur, N.I.**, Burmistrov, A.A., Lespinasse M., Sausse J., Cuney M., Leroy J.L., 2004, Comparative analyses of transport properties of granites on macro- and microscale in connection with radioactive waste isolation, (in Russian), *Geoekologija, Journal of Russian Academy of Sciences*, N4, 293-309.
16. Laverov, N.P., Petrov, V.A., Velichkin. V.I., Poluektov, V.V., Zharikov, A.V., Nasimov, R.M., **Dyaur, N.I.**, Rovniy, S.I., Drozhko, E.G., Ivanov, I.A., 2003, Petrophysical and mineralogic-chemical aspects of site choice for isolating HLW within metavolcanics in region of PO “Majak”, (in Russian), *Geoekologija, Journal of Russian Academy of Sciences*, N1, 5-22.

17. Genshaft, Ju.S., Saltykovsky, A.Ja., Nasimov, R.M., **Dyaur, N.I.**, Grechin, V.I., 2003, Elastic and density characterization of sedimentary and igneous rocks under high PT conditions, (in Russian): *Izvestiya, Physics of the solid Earth*, N8, 47-54.
18. **Dyaur, N.I.**, 2002, Influence of deformation on velocity of Compressional waves within rock specimens under confining pressure (in Russian): *Physics and Mechanics of Geomaterials*, "Vuzovskaya kniga", Moscow, 48-72.
19. Laverov, N.P., Petrov, V.A., Velichkin, V.I., Poluektov, V.V., Zharikov, A.V., Nasimov, R.M., **Dyaur, N.I.**, Burmistrov, A.A., Petrunin, G.I., Popov, V.G., Sigbatulin, V.G., Lind, E.N., 2002, Petrphysical Properties of Granitoids of Nizhnekansky Massif: to the Problem on Site Selection for HLW and NTW Isolating, (in Russian), *Geoekologija, Journal of Russian Academy of Sciences*, N4, 293-310.
20. Vorozhcov, L.N., Zonn, M.S., **Dyaur, N.I.**, Bugrimova, T.A., 1991, An experience of application of logging diagram and results of core investigation at seismic facials mapping of Surgut arch of Middle Priobie (in Russian): *Scientific-Technological Progress and advanced experience in Geology and Prospecting, VIEMS, MPG "Geoinformmark"*, Moscow, N9, 53-59.
21. Volarovich, M.P., Bayuk, E.I., **Dyaur, N.I.**, Efimova, G.A. Naumova, E.V., Levitova, F.M., 1991, Velocities of elastic waves of rocks from section of Kola Superdeep well (in Russian): *Physics of rocks under high pressure*. Moscow, Nauka, 17-23.
22. Volarovich, M.P., Bayuk, E.I., Efimova, G.A., **Dyaur, N.I.**, Naumova, E.V., Fomin, A.A., 1991, Physical-mechanical characteristics of section of Saatly Superdeep well SG-1 (in Russian): *Physics of rocks under high pressure*. Moscow, Nauka, 29-37.
23. Bayuk, E.I., **Dyaur, N.I.**, 1989, Physical properties of rocks in the process of deformation under high pressure. In the book: *High pressure investigations in geosciences*. Akademie der Wissenschaften der DDR, Akademie Verlag, Berlin, 155-164.
24. Bayuk, E.I., **Dyaur, N.I.**, 1987, Changes of some rock physical properties due to deformation under confining pressure (in Russian), *Geophysical Journal*, v. 9, N 4 52-59.
25. Bayuk, E.I., **Dyaur, N.I.**, 1986, Change of acoustic rock properties due to deformation under complex states of stress. *Acta Geodaetica, Geophysica et Montastica Hungary*, v. 21(4), 449-456.
26. Bayuk, E.I., **Dyaur, N.I.**, 1985, Effect of lateral stress on the elastic properties of rocks under deformation. In the book: *Physical properties of the mineral system of the Earth's interior. The union of Czechoslovak Mathematicians and Physicists*. Prague, 8-14.
27. **Dyaur, N.I.**, Bayuk, E.I., 1985, Influence of complex states of stress on acoustic characteristics of metamorphic and igneous rocks (in Russian): *Petrophysics of ancient rocks, Apatity, Kola Branch of Academy of Sciences USSR*, 87-92.
28. Volarovich, M.P., Bayuk, E.I., **Dyaur, N.I.**, 1985, Change in the Velocity of Longitudinal Waves during Deformation of Samples: *Izvestiya of the Academy of Sciences USSR, Physics of the Solid Earth*, v. 21, N4, 302-304.

Proceedings of International Conferences, Expanded Abstracts

1. L. Huang, **N. Dyaur**, R.R. Stewart, 2015, Elastic properties of 3D-printed physical models: Fluid substitution observations in cracked media. *SEG Technical Program Expanded Abstracts*, New Orleans, 3100-3104.
2. J. Zong, R.R. Stewart, **N. Dyaur**, M.T. Myers, 2015, Elastic properties of rock salt: Lab measurements and well log analysis in the Gulf of Mexico. *Technical Program Expanded Abstracts*, New Orleans, 3095-3092.
3. Jingjing Zong, Suleyman Coskun, Robert R. Stewart, **Nikolay Dyaur**, and Michael T. Myers, 2015, Salt densities and velocities with application to Gulf of Mexico salt domes. *Salt Challenges in Hydrocarbon Exploration. SEG 2015 Annual Meeting, Post-convention Workshop*, New Orleans, 2015, 5p.
4. Chang, L., **Dyaur, N.**, Stewart, R.R., 2015, The Eagle Ford Shale Trail. *GSH Journal*, September, Vol.5, N9, 30-31

5. Long Huang, Robert R. Stewart, **Nikolay Dyauro**, 2014, Fluid substitution effects on seismic anisotropy. Proceedings of SEG 2014 Annual Meeting, Denver, 330-335. DOI <http://dx.doi.org/10.1190/segam2014-0890.1>
6. Jiannan Wang, Robert Stewart, **Nikolay Dyauro**, and Lee Bell, 2014, Marine guided-waves: Applications and filtering using physical modeling data. Proceedings of SEG 2014 of Annual Meeting, Denver, 4804-4809, DOI <http://dx.doi.org/10.1190/segam2014-0880.1>
7. Chang, L., Stewart, R.R., **Dyauro**, N., 2014, Geophysics for Astronauts. GSH Journal, December, Vol.5, N4, 26-27
8. Zong, Jingjing, Robert R. Stewart, and **Nikolay Dyauro**, 2014, Elastic Properties of Salt: Lab Measurements and GoM Well Log Analysis. GSH Journal, September, Vol.5, N1, 28-29
9. Jingjing Zong, Robert Stewart and **Nikolay Dyauro**, 2014, Salt anisotropy: Ultrasonic lab experiments and travelttime ramifications. Proceedings of SEG 2014 Annual Meeting, Denver, 384-388, DOI: <http://dx.doi.org/10.1190/segam2014-0938.1>.
10. O. Akbas, R. Stewart and **N. Dyauro**, 2014, Microseismic Monitoring - Source Characterization and Physical Modeling. 76th EAGE Conference and Exhibition. DOI: 10.3997/2214-4609.20140721.
11. Omer Akbas, Robert R. Stewart and **Nikolay Dyauro**, 2013, Locating microseismic events: A physical modeling comparison using P and S waves in surface and borehole data. Proceedings of SEG 2013 Annual Meeting, Houston, Texas, 2099-2103.
12. Long Huang, Tao Jiang, Bode Omoboya, **Nikolay Dyauro**, Robert R. Stewart, and Samik Sil, 2013, Fluid substitution for an HTI medium. Proceedings of SEG International Exposition and 2013 Annual Meeting, Houston, Texas, USA, 22-27 September, 2659-2663.
13. Maria Krasnova, **Nikolay Dyauro**, Wafik Beydoun, Henri Houllievihue, and Evgeny Chesnokov, 2013, Ultrasonic Modeling of a "Microseismics" With Three Component Receivers. From Laboratory to Field. Proceedings of SEG International Exposition and 2013 Annual Meeting, Houston, Texas, USA, 22-27 September, 2162-2166.
14. Soumya Roy, Eray Kocel, **Nikolay Dyauro**, and Robert R. Stewart, 2013, Lateral heterogeneity and surface-wave inversion (MASW). Proceedings of SEG International Exposition and 2013 Annual Meeting, Houston, Texas, USA, 22-27 September, 1909-1913.
15. Mehdi E. Far, J. J. S. Figueiredo, Robert R. Stewart and **Nikolay Dyauro**, 2013, Fracture Compliance Measurements in Synthetic Fractured Media. Proceedings of SEG International Exposition and 2013 Annual Meeting, Houston, Texas, USA, 22-27 September, 2816-2820.
16. Bode Omoboya, J.J.S. de Figueiredo, **Nikolay Dyauro**, and Robert R. Stewart, 2012, Fluid filled cracks and seismic anisotropy. SEG 2012 Annual Meeting, Las Vegas, DOI <http://dx.doi.org/10.1190.segam2012-1145.1>, 4p.
17. Poulo E.P. Marcondes, Jose Jadsom S. de Figueiredo, Jorg Schleicher, Mehdi E. Far, **Nikolay Dyauro**, Robert R. Stewart. Experimental relation between stress and fracture properties on synthetic anisotropic media. SEG 2012 Annual Meeting, Las Vegas, DOI <http://dx.doi.org/10.1190.segam2012-1324.1>, 5p.
18. J.J.S. de Figueiredo, Jorg. Shleicher, R.R Stewart, and **N.Dyauro**, 2012, Estimation of fracture orientation through elastic ultrasonic waves. SEG 2012 Annual Meeting, Las Vegas, DOI <http://dx.doi.org/10.1190.segam2012-1281.1>, 5p.
19. Robert R. Stewart, **Nikolay Dyauro**, Bode Omoboya, J. J. S. de Figueiredo, Mark Willis, and Samik Sil, 2012, Ultrasonic imaging of anisotropic domains: laser-etched fractures in glass and 3D printed cracks. *9th Biennial International Conference & Exposition on Petroleum Geophysics*. Hyderabad, India, 16-18 February, www.spgindia.org/spg_2012/spgp493.pdf, 5p.
20. J.J.S. de Figueiredo, **Nikolay Dyauro**, Bode Omoboya, Robert Wiley, Anoop William, J. Schleicher and Robert R. Stewart. 2011, Influence of source frequency on shear wave splitting: An experimental approach. Proceedings of 73rd EAGE Conference & Exhibition incorporating SPE EUROPEC, Vienna, 2011 May 23-26, 4p.

21. Robert R. Stewart, **Nikolay Dyaur**, Bode Omoboya, J.J.S. de Figueiredo, Mark Willis and Samik Sill, 2011, Physical modeling of anisotropic domains: Ultrasonic imaging of laser-etched fractures in glass. SEG International Exposition and 2011 Annual Meeting, San Antonio, 4p.
22. Bode Omoboya, J.J.S. De Figueiredo, **Nikolay Dyaur**, and Robert R. Stewart. Effect of overburden pressure on anisotropic parameters in a layered orthorhombic medium. . Proceedings of 73rd EAGE Conference & Exhibition incorporating SPE EUROPEC , Vienna, May 23-26, 2011, 4p.
23. Irina O. Bayuk, Evgeny Chesnokov, Mike Ammerman, and **Nikolay Dyaur**, 2009, Elastic properties of four shales reconstructed from laboratory measurements at unloaded conditions, Proceedings of SEG International Exposition and 2009 Annual Meeting, Houston, Texas, USA, 25-30 October, 241-245.
24. **Dyaur, N.**, G. Kullmann, A. Ortiz, V. Pena and E. Chesnokov, 2008, Velocity Anisotropy and X-ray imaging of Barnett shale.: Proceedings of SEG International Exposition and 2008 Annual Meeting, Las Vegas, Nevada, USA, 9-14 November, 544-548.
25. Irina Bayuk, **Nikolay Dyaur**, Yasser Mohamed, Mike Ammerman, and Evgeni Chesnokov, 2007, 3D velocity reconstruction in shale derived from limited number of measurements, Proceedings of SEG International Exposition and 2007 Annual Meeting, San-Antonio, Texas, USA, 23-28 September, 1535– 1539.
26. **Dyaur, N.**, I. Bayuk, Y. Mohamed, G. Kullmann and E. Chesnokov. 2007, Investigation of elastic velocity in anisotropic shale for correction of hypocentral location and characterization of acoustic emission events, Proceedings of the Sixth International Conference on Acoustic Emission, edited by Kanjj Ono, Lake Tahoe, Nevada, USA, October 29-November 2, 282-287.
27. Nasimov, R. M., **Diaur, N.I.**, Genshaft, Yu. S., Saltykovsky, A. Ya., Frolova, Ju. V., Ladygin, V.M., 2005, High PT Experimental Studies of Hydrothermally Altered Tuffs, Kuril Islands, Russia // Proceedings World Geothermal Congress, Antalya, Turkey, 24-29 April 2005. <http://geothermal.stanford.edu/wgc2005> 347-354.
28. **Diaur, N.I.**, Rebetsky, J.L, Popov, A.A., Lutsky, V.A., Terentev, V.A., 2004, Changes of elastic properties and acoustic emission during formation of rapture and modeling of the non-uniform stress in the polyhedron rock specimens. Proceedings of 5th International Conference on PROBLEMS OF GEOCOSMOS, May 24-28, 2004, St Petersburg, Petrodvorets, 442-444.
29. Petrov, V.A., Poluektov, V.V., Dorokhova, L.I., Nasimov, R.M., **Diaur, N.I.**, Burmistrov, A.A., Lespinasse, M., Sausse, J., Cuney, M., Siitari-Kauppi, M., Kelokaski, 2004, Characterization of fluid flow pathways in granites at macro- and microscale. Proceedings of Int. Conf. on Rad. Waste. Disp., DisTec'04, Berlin, Germany, 197-205.
30. Petrov, V.A., Poluektov, V.V., Nasimov, R.M., **Diaur, N.I.**, Burmistrov, A.A., Lespinasse, M., Sausse J., Cuney M., Leroy J.L., 2003, Comparative analysis of hydraulic properties of granites at macro- and micro scale for the HLW disposal. Proc. ASME 2003 9th International Conference on Radioactive Waste Management and Environmental Remediation, ICM'03, Oxford, England, September 21–25, 2003, 10 p. (CD-ROM).
31. Nasimov, R.M., **Dyaur, N.I.**, Frolova, Ju.V., Ladigin, V.M., 2004, Nonlinear changes of density of hydrothermal altered tuffs due heating in isobaric conditions, (in Russian): Science and Technology in Russia, International newspaper N 4-5 (70-71), 8-13.
32. Nasimov, R.M., **Dyaur, N.I.**, Genshaft, Ju.S., Saltykovsky, A.Ja., Frolova, Ju.V., Ladigin, V.M., 2003, Investigation of tuffs density and porosity changes in cloused system under high pressure and high temperature, (in Russian): Stress-deformational condition and seismisity of lithosphere, Novosibirsk, Siberian Branch of RAS, Branch “Geo”, 399-401.
33. Petrov, V.A., Poluektov, V.V., Nasimov, R.M., **Diaur, N.I.**, Burmistrov, A.A., Lespinasse, M., Sausse, J., Cuney, M., Leroy, J., Siitari-Kauppi, M., Kelokaski, M., Oila, E., Sardini, P., 2003, Microstructural characterization of the radionuclide pathways in the rock matrix / Proceedings of Int. Conf. on Uranium Geochemistry, Nancy, France, 293-296.
34. **Dyaur, N.I.**, Nasimov, R.M., Petrov, V.A., Poluektov, V.V., 2002, Influence of watersaturation and thermal effect upon elastic properties of granitoid rocks. Proceedings of International Conference on Ecology of North Territory of Russia. Problems, Situation prediction, Development directions and Solutions, v.2, Archangelsk, 125-130.

35. Bayuk, E.I., **Diaur, N.I.**, Fomin, A.A., 1988, Change of physical properties of rocks in the process of deformation under high pressure. In the book: High pressure science and technology. Proceedings of XIth AIRAPT Inter. Conf., Kiev, Naukova Dumka v.2, 104-106.

Invention: One

Abstracts 1-2 pages: More than 60 abstracts were published in International, USSR, and Russian scientific conferences.

Scientific reports: More than 20 (in Russian).

Grants of Russian Foundation for Basic Research (RFBR): Twice was awarded as a Principal Investigator of initiative projects in basic research and earn the Foundation support:

1. Study of macrodeformation characteristics and its relation to process of defect accumulation at micro level in rocks, 2003-2005
2. Strain field evolution in rocks during rapture formation due to complicated stress in compression and tension experiments, 2006-2008