

Curriculum Vitae of
Natalia Semioshkina

Born September 24, 1947 in Moscow

Citizenship: Russian

Since 1979 married with the German resident Franz M. Wagner, Physicist

Since 1982 living in Munich, Germany

Academic degrees:

1966 Diploma in Physics at Moscow Institute of Steel and Alloys

2002 Doctoral Thesis on "The radiological situation at the former soviet atomic bomb test site" at the Allrussian Scientific Institute of Agroradiology and Agroecology, Obninsk, Russia.

Languages: Russian, German, English, French

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| 12/1971-3/1979 | Scientist at Kurchatov Institute of Atomic Energy, Moscow |
| 1982 – 1990 | Scientist at the Institutes of Crystallography at Technische Universität München, Universität München, Universität Erlangen, Technische Fachhochschule Berlin; scientific work for Atominstitut der Österreichischen Universitäten. General Subject: Dynamical diffraction. |
| 6/1991-5/1996 | Co-worker of Prof. A.M. Kellerer, Institute of Radiation Biology at former GSF, Neuherberg (now Helmholtz-Zentrum München, HMGU) Participation in the co-operation with GIS, mainly concerning the consequences of the Nuclear accidents at Chernobyl and in the Southern Urals. Participation in measurement campaigns in contaminated areas of Russia, Kazakhstan |
| 6/1996-10/2012 | Scientist at Institute of Radiation Protection/Department of Radiation Physics of HZM, working group of Risk Analysis. |

Participation in the following projects of the European Community as scientist and (if mentioned) as Coordinator or Project Officer:

RESTORE , Copernicus Projects , SAVE: Scientist

Evaluation and network of EC-decision support systems in the field of terrestrial radioecological research (EVANET-TERRA): Coordinator.

SOUL (Southern Urals Radiation Risk Research): Project officer

EDSS for Chile (Project of Volkswagen Foundation): Scientist

"Assessment of potential exposures of nuclear waste deposits up to 1,000,000 years"
(German Governmental project): Scientist

"Impact of climatic changes on the biosphere" (German Governmental project): Scientist

Current Project as partner in the EC-Network:

“Combining **epidemiology** and **radiobiology** to assess cancer risks in the breast, lung, thyroid and digestive tract after exposures to ionizing radiation with cumulated doses in the order of 100 mSv or below” (EpiRadBio): Project officer

Selected scientific publications and conference presentations

1. G. V. Smirnov, N. A. Semiochkina, V. V. Sklyarevskii, S. Kadeckova, B. Shestak. Observation of the Suppression of a Nuclear Reaction in a Direct Gamma Quantum Beam. JETP, 71 (1976) 2214 – 2229
2. G. V. Smirnov, N. A. Semiochkina, V. V. Sklyarevskii, S. Kadeckova, B. Shestak. The energy spectrum of gamma quanta anomalously transferring resonantly absorbing Fe-57 single Crystal. JETP 72
3. U. van Bürck, G.V. Smirnov, R.L.Mössbauer, F. Parak, N. Semioshkina (1978) Suppression of nuclear inelastic channels in nuclear resonance and electronic scattering of gamma quanta for different hyperfine transitions in perfect Fe-57 single crystal. J. phys. C, 11, 2305 – 2321
4. U. van Bürck, G.V. Smirnov, R.L.Mössbauer, H.J.Maurus, N. Semioshkina (1980) Enhanced nuclear resonance scattering in dynamical diffraction of gamma rays. J.Phys. C, 13, 4511 – 4529
5. Schmidbauer, E., E. Mosheim, and N. Semioschkina (1986), Magnetization and Fe-57 Mossbauer Study of Obsidians, *Physics and Chemistry of Minerals*, 13(4), 256-261
6. E. Born, H. Schwarzbauer, N.A.Semioshkina, E. Willibald, G.Zorn. (1986) Zeitschrift für Metallkunde, 77, 49 - 53
7. H. Jagodzinski, N. Semiochkina, H. Boysen, F. Frey (1987) The Four-Beam Case: Neutron Measurements on Alpha-Quarz. Acta Crystallographica, A43 C219
8. W. Treimer, H. Strothmann, N.Semioshkina, H.Schreib (1989) development of a new facility for neutron small angle scattering. Physica B, 156&157, 598 - 601
9. G. Voigt, N. Semiochkina, (1998) Initial evaluation of the radiological situation at the Semipalatinsk test site in the republic of Kazakhstan. GSF-Bericht 10/98
10. M. van der Perk, J. P. Absalom, P. A. Burrough, N. M. J. Crout, A. Gillit, B. J. Howard, H. Mehli, N. Semiochkina, P. Strand, G. Voigt, S. Wright (1998) GIS embedded models as tools to assess radionuclide transfer from soil via food products to humans in

areas contaminated by the Chernobyl accident. Presented at the First International Health Geographics Conference October 16-18, 1998 Baltimore, Maryland;

11. Beresford N.A., Voigt, G., Howard, B.J., Ratnikov, A., Travnikova, I., Gillett, A.G., Mehli, H., Semiochkina, N., Barnett, C.L. & Skuterud, L. Reducing the consumption of ¹³⁷Cs via forest fungi - provision of 'self-help' advice. In: Proceedings of the Nato Workshop: *Contaminated Forests: Recent Developments in Risk Identification and Future Perspectives*. Kiev, Ukraine, 24-28 June 1998, NATO Science Series, Kluwer Academic Press, Environmental Security Vol 58; 359 – 368 (1999)
12. M. van der Perk, T. Lev, J. P. Absalom, P. A. Burrough, N. M. J. Crout, E. K. Garger, A. Gillit, N. Semiochkina, G. Voigt. (2000) Spatial modelling of transfer of long-lived radionuclides from soil to food products in the Chernigov region, Ukraine. *J Environ Modelling* 128, 35-50
13. G. Voigt, N. Semiochkina (eds.) (2000) Restoration Strategies for radioactive contaminated ecosystems. GSF-Bericht 7/2000
14. G. Voigt, J. Absalom, N. A. Beresford, P. Burrough, N. M. J. Crout, A. Gillit, B. J. Howard, H. Mehli, G. Rauret, U. Sansone, N. Semiochkina, P. Strand, M. Van der Perk, M. Vidal, S. Wright (2000) Environmental decision support system for restoration strategies of contaminated ecosystems. In: Proceedings of the workshop on restoration of contaminated territories resulting from the Chernobyl accident Brussels, 29-30 June 1998 (L. Cecille Ed.) EUR report 18193 EN, 126-132 (2001)
15. G. Voigt, N. Semiochkina, G. Rosner, B. Karabalin, M. Mukuschewa, S. Wright, A. Sanchez, B.J. Howard, ITE, P. Strand. The present radiological situation at the nuclear weapons tests site at Semipalatinsk in Kazakhstan with regard to Pu contamination. In: 'Plutonium in the Environment' Radioactivity in the Environment (A. Kudo Ed.), Elsevier, Amsterdam, Vol. 1, 363-374 (2001)
16. N. A. Beresford, G. Voigt, S. M. Wright, B.J. Howard, , C.L. Barnett, B. Prister, M. Balonov, A. Ratnikov, I. Travnikova, A.G. Gillett, H. Mehli, L. Skuterud, S. Lepicard, N. Semiochkina, L. Perepeliantinikovqa, N. Goncharova, A.N. Archipov. (2001) Self-help countermeasure strategies for populations living within contaminated areas of Belarus, Russia and the Ukraine, *J. Environ Radioactivity* 56, 215-239

17. G. Voigt & N. Semiochkina (2001) The present radioecological situation of the Semipalatinsk Test Site and ingestion dose estimations for selected people living on the site. Proceedings of the WHO workshop on Dosimetry of the populations living in the proximity of the Semipalatinsk Nuclear Weapons Test Site, Helsinki 13 – 15 May 2001
18. G. Voigt, P. Schuller, N. Semiochkina (2001) The application of the RESTORE-EDSS to Chile. Proceedings of the ECORAD2001 conference, Aix-en-Provence 2 – 7 September 2001
19. Савинков А.Ф., Мамадалиев С.М., Фогт Г., Семиошкина Н.А., Сандыбаев Н.Т. и др. Изучение накопления ^{137}Cs в различных органах животных при аэрогенном поступлении./ Биотехнология. Теория и практика – 2000 - №3-4 - -с. 26-27.
20. Савинков А.Ф., Мамадалиев С.М., Фогт Г., Семиошкина Н.А., Сандыбаев Н.Т. и др. Определение влияния различных видов удобрений на переход ^{137}Cs из почв в урожай ячменя./Биотехнология. Теория и практика – 2000 - №3-4 - -с. 27.
21. Савинков А.Ф., Троицкий Е.Н., Фогт Г., Семиошкина Н.А., Сандыбаев Н.Т. и др . Поступление ^{137}Cs в растения люцерны из различных почв Казахстана./ Биотехнология. Теория и практика – 2000 - №3-4 - -с. 25-26.
22. Фогт Г., Семиошкина Н.А. и др. Современная радиологическая обстановка на Семипалатинском испытательном полигоне /Вестник НЯЦ РК – 2000 – вып.3 – с. 164-170
23. M. van der Perk, T. Lev, J. P. Absalom, P. A. Burrough, N. M. J. Crout, E. K. Garger, A. Gillit, N. Semiochkina, G. Voigt (2000) Spatial modelling of transfer of long-lived radionuclides from soil to food products in the Chernigov region, Ukraine. J Environ Modelling 128, 35-50
24. Voigt G., N. Semiochkina, G. Rosner, B. Karabalin, M. Mukuschewa, S. Wright, A. Sanchez, B.J. Howard, ITE, P. Strand. (2001) The present radiological situation at the nuclear weapons tests site at Semipalatinsk in Kazakhstan with regard to Pu contamination. In: 'Plutonium in the Environment' Radioactivity in the Environment (A. Kudo Ed.), Elsevier, Amsterdam, Vol. 1, 363-374
25. Göksu, H. Y., Semioschkina N., Shishkina, E., Wieser, A., El-Faramawy, N.A., Dregteva, M.O., Jacob, P., Ivanov, D.V. (2002) Thin layer $\alpha\text{-Al}_2\text{O}_3\text{:C}$ beta dosimeters for the assessment of current dose rate in teeth due to ^{90}Sr intake, and comparison with

electron paramagnetic resonance dosimetry. Radiation Protection Dosimetry, vol.101, Nos. 1 – 4. pp. 507 – 513

26. Semioshkina, N., G. Voigt and D. Tarsitano (2003). Evaluation and network of EC – Decision Support Systems in the field of terrestrial radioecological research – EVANET. In: Proceedings of the 5th Eurosafe Forum, Paris, pp. 39-51.
27. Semiochkina, N., Voigt, G., Mukusheva, M., Bruk, G., Travnikova, I., Strand, P. (2004) Assessment of the current internal dose due to ^{137}Cs and ^{90}Sr for people living within the Semipalatinsk Test Site, Kazakhstan. Health Physics **86** (2): 187-191.
28. Howard B. J., Semioshkina, N., Voigt, G., Mukusheva, M., Clifford, J. (2004) Radiostrontium contamination of soil and vegetation within the Semipalatinsk test site. Radiat. Environ. Biophys. **43**: 285-292.
29. Tarsitano D., Semioshkina N. and Voigt G., Critical evaluation of the available models. (EVANET-TERRA report. GSF: Germany, 2004)
30. D. Tarsitano, N. Semioshkina and G. Voigt. EVANET-TERRA - evaluation and network of EC - decision support systems in the field of terrestrial radioecological research. ECORAD 2004: The Scientific Basis for Environment Protection Against Radioactivity, Aix-en-Provence, France.
31. D. Tarsitano, N. Semioshkina and G. Voigt (2005) EVANET-TERRA - evaluation and network of EC - decision support systems in the field of terrestrial radioecological research. Radioprotection, Vol. 40, Suppl. 1, S261 - S268
32. E.A.Shishkina, H.Y.Göksu, N.A.El-Faramawy, N.Semioshkina (2005) Assessment of ^{90}Sr concentration in dental tissue using thin-layer beta-particle detectors and verification with numerical calculation. Rad. Research, 163, 462 – 467
33. [Spiridonov SI](#), [Gontarenko IA](#), [Mukusheva MK](#), [Fesenko SV](#), [Semioshkina NA](#). Prediction of ^{137}Cs accumulation in animal products in the territory of Semipalatinsk test site. [Radiats Biol Radioecol](#). 2005 Jul-Aug;45(4):480-7.
34. Semioshkina, N., Voigt, G., Fesenko, S., Savinkov, A., Mukusheva, M. (2006) A pilot study on the transfer of ^{137}Cs and ^{90}Sr to horse milk and meat. J. of Environ. Radioactivity, 85, 84-93
35. N. Semioshkina, G. Voigt (2006) An Overview on GSF activities at the Semipalatinsk Test Site, Kazakhstan. J. Radiat. Res.,47, Suppl., A95 – A100.

36. Savinkov, A., Semioshkina, N., Howard, B.J., Voigt, G. (2007) Radiostrontium uptake by plants from different soil types in Kazakhstan. *Science of total Environment*, 373, 324 - 333
37. Semioshkina, N., Proehl, G., Savinkov, A., Voigt, G, The transfer of ^{137}Cs and ^{90}Sr from feed to rabbits, *J. of Environ. Radioactivity*, 98 (2007), 84-93
38. N. Semioshkina, V. Potapov, V. Lukyanov and O. Ivanov. Measurements of ^{90}Sr Content in Teeth of Techa River Resedents. Nuclear Science Symposium Conference Record, 2008, NSS'08, IEEE, 19-25. Oct.2008
39. V.Shershakov, S. Fesenko, I Kryshev and N. Semioshkina. Decision-Aiding Tools for Remediation Strategies. In: M.S.Baxter, editor: *Radioactivity in the Environment*, Vol. 14, Ramediation of Contaminated Envorinments, G. Voigt and S. Fesenko. The Netherlands: Elsevier, 2009, pp 121-175. ISBN: 978-0-08-044862-6.
40. N. Semioshkina, I. Fiedler, B. Schillinger, A. Ulanovsky, V. Potapov, O. Ivanov, F.M. Wagner, U. Gerstmann. Comparison of three non-destructive methods to measure ^{90}Sr in human tooth samples, *Radiation Measurements* 46 (2011) 1897-1899
41. Ch. Staudt, N. Semiochkina und J. Ch. Kaiser, Fachliche Unterstützung des BfS bei der Erstellung von Referenzbiosphärenmodellen für den radiologischen Langzeitsicherheitsnachweis von Endlagern - Modellierung des Radionuklidtransports in Biosphärenobjekten, Bericht, BfS-RESFOR-78/13
42. C. Staudt, N. Semiochkina, J.C. Kaiser, G. Proehl. Modeling the impact of climate change in Central Europe with biosphere models for long-term safety assessment of nuclear waste repositories, *Journal of Environmental Radioactivity*, Volume 115, January 2013, Pages 214-223
43. Bassam Shuhaibar, Jaroslav Jakes, Natalia Semioshkina, Gabriele Voigt. (2014) The Concept Of Dessak: Development Of Environmental Decision Support For Radioecologically Sensitive Areas In Kuwait. Pesentation on ICRER, Barcelona, Spain, 7-12 September 2014