Geophysica (1997), 33(2), 3-7

Professor Sergei A. Kitaigorodskii in Finland

Eero Holopainen

Department of Meteorology, P.O. 4 (Yliopistonkatu 3), FIN-00014 University of Helsinki, Finland

The purpose of this communication is to briefly report the connections between Prof. Sergei A. Kitaigorodskii and the Finnish geophysical community. Of all the geophysicists in Finland I have known Sergei longest, our association having started in the beginning of the 1970s.

As the CV of Prof. Kitaigorodskii shows (see Appendix), he completed his undergraduate studies at Moscow State University, and his postgraduate studies at the USSR Academy of Sciences. He obtained his Ph.D. degree from the Institute of Physics of the Atmosphere, and his Dr. of Science degree from the Institute of Oceanology. As far as his work was concerned the most important time for him in Moscow were the years 1968-77, when he was the Head of the Laboratory of Physics of Ocean Atmosphere Interaction at the Institute of Oceanology. As his CV further shows, after 1978 he spent a couple of years as a visiting scientist at various European and American universities, eventually becoming a full professor of oceanology at the Johns Hopkins University in Baltimore, USA, where he worked between 1980 and 1992.

His official CV shows practically no connection between the Professor and Finland before 1980. However, before this time Sergei had unofficial ties with Finland, as he married a Finnish woman, who was working as a correspondent in Moscow. His wife subsequently returned (with their twin daughters) to Helsinki. She now and then invited him to Finland for his holidays. The Soviet system was flexible enough to allow a husband to temporarily visit his family. In Finland Sergei established links with representatives of the Finnish geophysical community, and in 1980 he was made a Foreign Honorary Member of the Geophysical Society of Finland.

Prof. Kitaigorodskii has carried out research and lectured at four Finnish institutes, these being: the Department of Meteorology and the Department of Geophysics of the University of Helsinki, the Finnish Institute of Marine Research, and the Finnish Meteorological Institute.

The doctoral students of Prof. Kitaigorodskii in Finland (*and their Ph.D. thesis titles*) are:

Pentti Mälkki, 1975: *On the variability of currents in a coastal region in the Baltic Sea.*

Kimmo Kahma, 1981: *On the growth of wind waves in fetch-limited conditions.*

Sylvain Joffre, 1981: *A theoretical and empirical study of the atmospheric boundary layer dynamics over a frozen sea.*

Any account of Prof. Kitaigorodskiis contacts with Finland would definitely be incomplete without mentioning the late Academician Erik Palmén (1898-1985), the internationally best known Finnish meteorologist and oceanographer. When he visited the Meteorology Department of Helsinki University, Kitaigorodskii used to spend long hours discussing various matters with Erik Palmén. While the Palmén Memorial Symposium on Extratropical Cyclones (organized jointly by the Geophysical Society of Finland, the American Meteorological Society and the Geophysical Societies of Denmark, Norway and Sweden) was held in Helsinki in 1988, Prof. Kitaigorodskii attended the symposium and gave a speech at the conference dinner (see the photograph below).

I want to congratulate Prof. Kitaigorodskii on his 60th anniversary, and to thank him for his many discussions he has had with myself and other members of the Finnish academic community, and the

lectures he has given in Finland. For Finnish students and researchers, his lectures gave the opportunity to come into contact with a highly creative and warm person with a genuine Russian capacity for enjoying life. I am sure that the entire meteorological and oceanographic community in Finland will join me in these congratulations and thanks.

Professor S.A.Kitaigorodskii addressing the audience at the conference dinner during the Palmén Memorial Symposium on the 1st of September, 1988. (Photo by Paavo Airaksinen).

Appendix:

CV of Prof. Sergei A. Kitaigorodskii including the list of his publications since 1978 (while living in the West).

Date of Birth: September 13, 1934
Place of Birth: Moscow, USSR
Marital Status: Married since 1969-1993, two children

M.Sc.	The Moscow State University, 1956
Ph.D.	Institute of Physics of Atmosphere, the USSR Academy of Scinces, Moscow, 1960.
Dr.Sc.	Institute of Oceanology, the USSR Academy of Sciences, Moscow, 1968.

1960-1962	Post Doctoral Fellow, Institute of Oceanology, the USSR Academy of Sciences
1962-1968	Senior Scientist, Institute of Oceanology, the USSR Academy of Sciences
1968-1977	Head of the Laboratory of Physics of Ocean-Atmosphere Interaction, Institute of Oceanology, the USSR Academy of Sciences
1978-1979	Visiting Professor at the Max-Planck-Institute for Meteorology in Hamburg, and The Johns Hopkins University and the Cornell University in USA
1979-1985	Lecturer, the Institute of Physical Oceanography, University of Copenhagen

1980-1992	Professor of Oceanography, The Johns Hoppkins University Baltimore, Maryland, USA
Recipient:	Rosenthiel Gold Medal Award (1973), USA
	Liege University Award (1978), Belgium
Member:	Foreign Honorary Member of the Finnish Geophysical Society (1980)
	Foreign Member of the Danish Royal Academy of Science and Letters (1984)
	Member of the American Geophysical Union (1989)

PUBLICATIONS

Books and compendia:

Physics of air-sea interaction, 1973, 237 pages. Israel Program for Scientific Translations

Co-author:

Some problems of the theory of waves in the ocean (1975).

Atmospheric Boundary Layer, 1976, 197 pages. (Together with S. Joffre), Department of Meteorology, University of Helsinki

Similarity theories in geophysical fluid mechanics (1977). (Together with A. Zeidler), Polish Academy of Sciences, PWW - Warshawa - Poznan.

Articles:

About 100 research papers, the following ones since 1978 (while living in the West:

Review of the theories of wind mixed-layer deepening. *Proceedings of the 10th Liege Colloqium on Ocean Hydrodynamics,* Elsevier, 1979**,** pp. 1-33.

Note on the parameterization of turbulent gas transfer across an air-water interface (with P. Mälkki) *Finnish Marine Reseach,* **246**, 111-124, 1979.

On the theory of the surface-stress induced entrainment at a buoyancy interface (toward interpretation of KP and KPA experiments). *Tellus,* **33**, 89-101, 1981.

The statistical characteristics of wind-generated short gravity waves. *Proceedings of Symposium on Spaceborne Synthetic Aperture Radar for Oceanography*, (Eds. B. Beal, P. Deleonibus, I, Katz). The Johns Hopkins University Press, 1981, pp 1-9.

On the theory of the equilibrium range in the spectrum of wind-generated gravity waves, *Journal of Physical Oceanography*, **13**, 816-827, 1983.

A case study of wave-turbulence interactions in the marine surface layer (with M. Donelan, J.L. Lumley and E.A. Terray). *Proceedings of fifth conference on waves and stability of the American Meteorological Society*, Boston, March 1983.

Wave turbulence interactions in the upper ocean, Part I. The energy balance of the interacting fields of surface wind waves and wind-induced three dimensional turbulence, (with J.L. Lumley). *Journal of Physical Oceanography*, **13**, 1977-1987, 1983.

Wave turbulence interactions in the upper ocean, Part II. Statistical characteristics of wave and turbulent components of random velocity field in the marine surface layer, (with J.L. Lumley, M. Donelan and E.A. Terray). *Journal of Physical Oceanography*, **13**, 1988-1999, 1983.

The equilibrium ranges in wind wave spectrum: physical arguments and experimental evidence for and against their existence. *Proceedings of the International Symposium on Wave dynamics and Radio*

Probing of the Ocean Surface, Miami, USA. Ed. O.M. Phillips and Klaus Hasselman. Plenum Press, 1983, pp. 9-40.

Wind-wave effects on the structure of turbulence near air-sea interface (with M. Donelan). *Proceedings of the International Symposium on Gas Transfer at Water Surfaces*.. Reidel Publishing Company, 147-170, 1984.

On the fluid dynamical theory of the turbulent gas transfer across an air-sea interface in the presence of breaking wind waves. *Journal of Physical Oceanography*, **14**, 960, 1984.

Entrainment due to turbulent shear flow at the interface of a stably stratified fluid (with S. Narimousa and R.R. Long). *Tellus*, **38A**, 76-87, 1985.

A general explanation of the quasi-universal form of the spectra of wind generated gravity waves at different stages of their development. *APL Technical Digest* **8**, 1987, 11-15.

In search of a simple scaling for the height of the stratified atmospheric boundary layer (with S.M. Joffre). *Tellus*, **40A**, 419-433, 1988.

A note on the similarity theory for atmospheric boundary layers in presence of background stable stratification. *Tellus*, **40A**, 434-438, 1988.

How wave breaking can influence the intensity of evaporation. *Proceedings of the Advanced Workshop Humidity Exchange over the Sea, Main Experiment (HEXMAX), Analysis and Interpretation*. Dellenhove, Epe, The Netherlands, April 25-29. 1988.

A note on the variability of the heights of tidal benthic boundary layers. *Geophysica*, **26**, 37-44, 1990.

The location of thermal shelf fronts and the variability of the heights of tidal benthic boundary layers. *Tellus*, **44A**, 425-433, 1992.

The dissipation subrange in wind wave spectra. *Matematisk-fysiske Meddelelser*, **42**:5, 24 pp. The Royal Danish Academy of Sciences and Letters, Copenhagen 1992.

Observations of the enhancement of kinetic energy dissipation beneath breaking wind waves (with W.M. Drennan, K.K. Kahma, E.A.Terray and M.A. Donelan). *Proceedings of the IUTAM Breaking Waves Symposium, Sydney, Australia,1991*. (Eds. M.L. Banner and R.H.J. Grimshaw), 95-101. Springer-Verlag, 1992.

The dissipation subrange of wind wave spectra. *Proceedings of the IUTAM Breaking Waves Symposium, Sydney, Australia, 1991*. (Eds. M.L. Banner and R.H.J. Grimshaw), 199-206. Springer-Verlag, 1992.

Enhanced dissipation of kinetic energy beneath surface waves. (With Y.C. Agrawal, E.A. Terray, M.A. Donelan, P.A. Hwang, A.J. Williams III, W.M. Drennan and K.K. Kahma). *Nature*, **359**, (17 September 1992), 219-220.

Estimates of kinetic energy dissipation under breaking waves. (With E.A. Terray, M.A. Donelan, Y.C. Agrawal, W.M. Drennan, K.K. Kahma, A.J. Williams III and P.A. Hwang). Accepted to *Journal of Physical Oceanography (1995).*

The influence of breaking wind waves on the aerodynamic roughness of the sea surface as seen from below. Thesis. Symposium on the air-sea interface. Marseille, June 24-30 1993, France.

A note on the influence of breaking wind waves on the aerodynamic roughness of the sea surface as seen from below. Tellus, 1994, v. 46A, pp.681-685.

A note on the fluid dynamical analogy between momentum transfer across air-sea interface and solid surface. Journal Boundary Layer Meterorology. In press (With Yu.A. Volkov and A.A. Grachev).

Wind wave breaking and aerodynamic roughness of air-sea interface as seen from above and from below. (Submitted to Boreal Environment Research.)