



Curriculum Vitae of Alexey Dm. Zavyalov

BORN: March 5, 1948, at Ivanteevka, suburb of Moscow, Russia; Male.

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EDUCATION:

Mining engineer-physicist, Moscow Mining Institute (1972).

Ph.D. in Geophysics, Institute of Physics of the Earth, Russian Academy of Sciences (1985).

Dr. of Science, in Geophysics, Institute of Physics of the Earth, Russian Academy of Sciences (2003).

POSITIONS HELD:

Student of Moscow Mining Institute (1966-1972)

Collector, Institute of Physics of the Earth, Russian Academy of Sciences (1967-1968).

Demonstrator, Institute of Physics of the Earth, Russian Academy of Sciences (1970-1972).

Engineer, Institute of Physics of the Earth, Russian Academy of Sciences (1972-1974).

Junior scientific researcher, Institute of Physics of the Earth, Russian Academy of Sciences (1974-1986).

Senior scientific researcher, Institute of Physics of the Earth, Russian Academy of Sciences (1986-1993).

Scientific secretary, Institute of Seismology, Russian Academy of Sciences (1993-1998).

Leading researcher, Institute of Physics of the Earth, Russian Academy of Sciences (1998-2004).

Head of Laboratory "Continental Seismicity and Seismic Disaster Forecasting", Institute of Physics of the Earth, Russian Academy of Sciences (2004-Present time).

Member of Editorial Board, Journal "Volcanology and Seismology" (1999-Present time).

Vice-Chairman, Chairman, Scientific Secretary of the Section of Seismology and Earth's Interior Physics of the National Geophysical Committee of Russia (1998-Present time).

Secretary of Subcommittee on Earthquake Prediction Research of European Seismological Commission (2002-2006).

Titular member of Russia in European Seismological Commission (2006-Present time).

Scientific Secretary of Scientific Council on Problems of Seismology, Russian Academy of Sciences (2006-Present time)

Chairmen of IASPEI Commission on Earthquake Sources: Modeling and Monitoring for Prediction (2007-Present time)

Vice-President of European Seismological Commission (elected in September 2010)

Member of Bureau of National Geophysical Committee (elected in May 2011)

IASPEI Executive Committee member (elected in July 2011)

SCIENTIFIC CONTRIBUTIONS:

- (1) In 1967-1980 he participated in the organization of station network for registration of electrotelluric field to reveal earthquakes precursors in Kamchatka and in Central Asia (Garm), in data processing and interpretation.

- (2) In 1980, he for the first time introduced the parameter of seismogenic ruptures density based on destruction concentration criterion, which became one of the most efficient earthquake precursors.
- (3) He is one of the authors of the method for medium-term earthquake forecasting by a complex of prognostic features (algorithm MEE – Map of Expected Earthquakes) (1985).

SELECTED PUBLICATIONS:

- Sobolev G.A., **Zavialov A.D.**, (1981). A concentration criterion for seismically active faults. In "Earthquakes prediction - an international review", Maurice Ewing Series 4, New-York, p.377-380.
- Shumilina L.S., Kuznetsova K.I., **Zavialov A.D.**, (1982). The magnitude-frequency relation as an evidence of tectonic stress with reference to the Kamchatka seismic area. J. Earthquakes prediction research, v.1, # 3, p.265-273.
- Zavialov A.D.**, Sobolev G.A., (1988). Analogy in precursors of dynamic events at different scales. Tectonophysics, 152, p.277-282.
- Sobolev G.A., Chelidze T.L., **Zavyalov A.D.**, Slavina L.B., Nikoladze V.E., (1991). The maps of expected earthquakes based on a combination of parameters. Tectonophysics, 193, p.255-265.
- Zavyalov A.D.**, Sobolev G.A., (1991). Experience in using maps of expected earthquakes for medium-term prediction at various seismoactive regions. International Conference on "Earthquake Prediction: State-of-the-art", Scientific-Technical Contributions. Strasbourg, France, 15-18 October 1991, p.175-178.
- Zavyalov A.D.**, Zhang Zhaocheng, (1993). Using the MEE (Map of Expected Earthquakes) Algorithm in Long- and Medium-Term Earthquake Prediction in Northeast China. Journal of Earthquake Prediction Research, Beijing. Vol.2, # 2, p.171-182.
- Smirnov V.B., Ponomarev A.V., **Zavyalov A.D.**, (1995). Acoustic structure in rock samples and the seismic process. Physics of the solid Earth (English translation). Vol.31, # 1, August 1995 (Russian edition: January 1995), p.38-58.
- Smirnov V.B., **Zavyalov A.D.**, (1997). Incorporating the fractal distribution of faults as a measure of failure concentration. Volcanology and Seismology, vol.18, p.447-452.
- Zavyalov A.D.**, Nikitin Yu.V., (1997). Concentration of ruptures as a criterion of failure preparation at different scales. Volcanology and Seismology, vol.19, p.79-96.
- Ponomarev A.V., **Zavyalov A.D.**, Smirnov V.B., Lockner D.A., (1997). Physical modeling of the formation and evolution of seismically active fault zones. Tectonophysics, vol.277, # 1-3, p.57-82.
- Zavyalov A.D.**, Habermann R.E., (1997). Application of the concentration parameter of seismoactive faults to Southern California. Pure and Applied Geophys, vol.149, p.129-146.
- Sobolev G.A., Tyupkin Yu.S., **Zavyalov A.D.**, (1999). Map of expected algorithm and RTL prognostic parameter: joint application. Russian Journal of Earth Sciences. Vol 1, # 4, July 1999, p.301-309. http://eos.wdcb.rssi.ru/rjes/rjes_r00.htm
- Zavyalov A.D.**, Nikitin Yu.V., (2000). Seismicity localization before large Kamchatka earthquakes. Volcanology and Seismology, vol.21, p.525-534.
- Zavyalov A.D.**, (2002). Testing the MEE Prediction Algorithm in Various Seismically Active Regions in the 1985-2000 Period: Results and Analysis. Physics of the Solid Earth. vol.38, # 4, pp.262-275.
- Zavyalov A.D.**, (2005). From the Kinetic Theory of Strength and Fracture Concentration Criterion to the Seismogenic Fracture Density and Earthquake Forecasting. Physics of the Solid State. vol. 47, # 6, pp.1034–1041. Translated from Fizika Tverdogo Tela, 2005, vol. 47, # 6, pp.1000–1008.

- Zavyalov A.D.**, (2006). Middle-term Earthquake Prediction: fundamentals, method, realization. Moscow, Nauka Publishing House, 256 p. (in Russian).
- National Report to the International Association of Seismology and Physics of the Earth's Interior of the International Union of Geodesy and Geophysics 2003-2006. (2007) // **A.D.Zavyalov** (ed.). Moscow, National Geophysical Committee RAS, <http://ngc.gcras.ru/documents.html>.
- Gliko, A. O., **A.D. Zavyalov**, A.A. Malovichko, G.A. Sobolev, V.I. Ulomov, Eds. (2011), National Seismological Review of Russia (2007–2010), Publ. GC RAS, Moscow, 174 pp., doi:10.2205/2011-IUGG-NRR2007-2010.