

PROFESSOR FELIX FUADOVICH APTIKAEV AT 80 YEARS



Professor Felix Fuadovich Aptikaev was born in Moscow, on 11 October 1932. He graduated in 1956, as a geophysicist, from the Faculty of Geology of the Moscow State University. He graduated also as a mathematician, from the Faculty of Mathematics – Mechanics of the Kazakh State University. In 1968 he obtained the Ph.D. title from the *O.Yu. Schmidt* Institute of Physics of the Earth of the Russian Academy of Sciences.

He started his career in 1956 at the Institute of Permafrost of the Yakutsk City, where he worked until 1962 as a Scientist. Since 1962 he worked in the frame of the *O.Yu. Schmidt* Institute of Physics of the Earth of the Russian Academy of Sciences, successively as Scientist, Senior Scientist, Leading Scientist, Principal Scientist and Professor.

His main field of work consisted of engineering seismology, seismic intensity scale, detailed seismic zoning, strong ground motion prediction. Other fields dealt with were microtremors, seismic waves detection and strong seismic wave propagation. During last time he was active especially in relation to seismic intensity scales.

He received important honours and awards. To be mentioned here: the Diploma and Schmidt Medal of the Institute of the Physics of the Earth, as well as three medals from the Russian Government. He was acknowledged as Professor. He was the Scientific Secretary of the Soviet National Committee of the European Association for Earthquake Engineering, 1981–1982.

He was active in the frame of the Interagency Council on Seismology and Earthquake Engineering of the Academy of Sciences, as:

- Deputy-Chairman of the Earthquake Engineering Section;
- Head of the Working Group for Detailed Seismic Zoning, 1973–1992;
- Head of the Working Group for the Seismic Intensity Scale, 1990–1992.

He acted also as Deputy-director of Project 4 (engineering seismology) in the frame of the Soviet-American Agreement on Environment Protection 1974–1992.

He authored one book and co-authored nine books. He authored numerous articles in refereed journals and scientific communications.

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A chance of direct scientific cooperative activities of our institutes was provided by the meeting held in Moscow in 2004 under the auspices of the NATO Programme “Security through Science” (NATO – Russia Joint Scientific and Technological Cooperation), on the theme “Disaster Forecast and

Prevention". Dr. Frederick Kringold, Director, Center for Disaster Risk Management, Virginia Tech., who has chaired the meeting, encouraged an application to the NATO Office of Brussels on the theme of refinement of the concept of seismic intensity. Soon thereafter, during a meeting held in Bucharest, hosted by Prof. Dorel Zugrăvescu, Corresponding Member of the Romanian Academy, Director of the Institute of Geodynamics of the Romanian Academy, Academician Alexandr Gliko, Director of the *O.Yu. Schmidt* Institute of Physics of the Earth of the Russian Academy of Sciences, Moscow, agreed to set up a joint project aimed to contribute to developments in the domain of quantification of seismic intensity. He nominated Prof. Felix Aptikaev, who was leading research activities in this field, as a counterpart on behalf of his institute. During subsequent contacts, it was agreed to invite the Institute of Geology and Seismology of Chişinău, the Republic of Moldova (Director and counterpart: Dr. Vasile Alcaz), to join the project. The application forwarded to the NATO Office was accepted and NATO provided the Collaborative Linkage Grant No. 981619 for the Project on "Quantification of seismic action on structures". The outcome of this project was represented by several papers presented at international meetings and by a book having the same title, published in 2012 by the AGIR Publishing House, Bucharest. As a representative of the NATO member country involved in this project, I acted here as a Director.

The activities required by the project referred to required considerable efforts. The outcome of the very comprehensive work of statistical analysis of specific macroseismic and instrumental information collected, together with the in depth research on the philosophy of seismic intensity evaluation, performed by Prof. Aptikaev, played here too a crucial role.

The valuable contributions in this connection of Dr. Olga Erteleva, Prof. Aptikaev's wife, but, on behalf of the Romanian group involved, also of Dr. Ioan Sorin Borcia, must be emphasized with gratitude.

The cooperative activities in the frame of the Project were fruitful and also pleasant. Coming into direct contact with Professor Aptikaev's works was particularly instructive. Our contributions to this work were complementary. Working together with Professor Felix Fuadovich Aptikaev and exchanging several views was a real pleasure.

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Date and place of birth: 11 October 1932, Moscow

Nationality: Russian

Education (*degrees, dates, universities*)

1956 – Geophysicist, Moscow State University, Faculty of Geology

1968 – Mathematician, Kazakh State University, Faculty of Mathematics–Mechanics.

1968 – Ph. Degree, Institute of the Physics of the Earth, Russian Academy of Sciences

Career/Employment

1956–1962 – Scientist, Institute of Permafrost, Yakutsk city.

Since 1962 – Scientist, Senior Scientist, Leading Scientist, Principal Scientist, Professor, Institute of the Physics of the Earth Russian Academy of Sciences

Specialization

(i) Main field

Engineering seismology. Seismic intensity scale, Detailed seismic zoning, Strong ground motion prediction.

(ii) Other fields

Microseisms. Seismic waves detection. Strong seismic wave propagation.

(iii) Current research interest

Seismic intensity scale

Honours, Awards, Fellowships, Membership of Professional Societies

Diploma and *Schmidt Medal*, Institute of the Physics of the Earth. Three medals from Russian Government.

Scientific Secretary of Soviet National Committee of European Association for Earthquake Engineering, 1981–1982.

Interagency Council on Seismology and Earthquake Engineering of Academy of Sciences:

- 1) Deputy-Chairman of Earthquake Engineering Section;
- 2) Head of Working Group for Detailed Seismic Zoning 1973–1992;
- 3) Head of Working Group for Seismic Intensity Scale 1990–1992.

Deputy-director of Project 4 (engineering seismology) in Soviet-American Agreement on Environment Protection 1974–1992.

Publications

- Number of papers in refereed journals: 15
- Number of communications to scientific meetings: 21
- Number of books: 1– as single author; 9 – co-authored

RECENT SELECTED PUBLICATIONS*A. Selected publications since 2000*

1. KALIBERDA, I.V., AGAPOVA, G.A., APTIKAEV, F.F. *et al.* (2000), *Nuclear and Radiation Safety Guide “Evaluation of Design Basis Ground Motions”*. State Nuclear Supervision of Russia. Moscow, 63 pp. (in Russian).

2. SOBOLEV, G.A., ANOSOV, G.I., APTIKAEV, F.F. *et al.* (2000), *Natural Hazard in Russia*. Moscow, KRUG Publ., 295 pp. (in Russian).

3. APTIKAEV, F.F., BARKOVSKII, E.V., KEDROV, O.K. *et al.* (2000), *On the Seismic Event of April 26, 1986, in the Area of Chernobyl' Nuclear Power Plant // Izvestia Physics of the Solid Earth*, **36**, 3, pp. 256–261.

4. APTIKAEV, F.F., MIKHAILOVA, N.N. (2000), *Estimation, Based on Probability, of Maximum Accelerations from Macroseismic Data // J. Earthq. Pred. Res., Moscow – Beijing*, **8**, 2, pp. 233–236.

5. APTIKAEV, F.F., ERTELEVA, O.O. (2001), *Method of Calculating a Regional Design Response Spectrum // Earthquake Engineering. Safety of Structures*, **4**, pp. 4–7 (in Russian).

6. APTIKAEV, F.F., ERTELEVA, O.O. (2002), *Generation of Synthetic Accelerograms by the Scaling of Real Records // Izvestia Physics of the Solid Earth*, **38**, 7, pp. 39–45. (in Russian).

7. ANTONOVA, L.V., APTIKAEV, F.F. (2004), *The Map of Short-Period Microseisms Level on the Territory of Russia and Surrounding Countries // Investigations in Geophysics Domain*. Moscow: OIFZ, pp. 43–53 (in Russian).

B. Publications on topics related to the project proposed

1. APTIKAEV, F.F. (1977), *The correlation between MM-Intensity, Relative Duration of Shaking and Peak Acceleration // Newsletter EERI*, March 1977.

2. APTIKAEV, F.F. (1972), *Notes on instrumental scale // Bull. Engr. Seismol.*, **7**, Erevan, C, 55–62 (in Russian).

3. APTIKAEV, F.F. (1973), On ground conditions influence on seismic effect in Alma-Ata using data of explosions in Medeo, 1965-1967 // Bull. Eng. seismol., **8**, Erevan, C. 31–35 (in Russian).
4. NAZAROV, A.G., MEDVEDEV, S.V., APTIKAEV, F.F. *et al.* (1975), *Scale and system to measure seismic intensity* (Project) // Seismic intensity and their measurement methods. Moscow: Nauka Publ., pp. 7–10 (in Russian).
5. APTIKAEV, F.F. (1975), *Seismic intensity estimation with due regard oscillation duration* // Seismic intensity and their measurement methods. Moscow: Nauka Publ., pp. 233–239 (in Russian).
6. APTIKAEV, F.F., SHEBALIN, N.V. (1989), *Specification of correlations between seismic effect and dynamic parameters of ground motion* // Voprosy Eng. Seismology, Issue **29**, pp. 98–108 (in Russian).
7. APTIKAEV, F.F., ZHUNUSOV, T.ZH., ASHIMBAEV, I.E. *et al.* (1996), *Project of standard for the earthquake intensity* // Earthquake Engineering, Issue **5**, Moscow, pp. 12–20.
8. APTIKAEV, F.F., GAIPOV, B.N., GARAGOZOV, G. (1999), *Regional Seismic Intensity Scale for Turkmenistan* // Materials of International Science-Practical Conference in Memoria of 50 Anniversary of Ashgabad Earthquake. Turkmenistan, Ashgabad: Damana Publ. 1999, pp. 96–102 (in Russian).
9. APTIKAEV, F.F. (1981), *The correlation of MM-intensity with parameters of ground shaking* // Proc. 7th Conf. EACC, Athens, pp. 117–126.
10. APTIKAEV, F.F. (1985), *The Parameterization of Ground Motion* // Proc. 23rd General Assembly IASPEI, Tokyo, Abstracts, Vol. 2.
11. MIKHAILOVA, N.N., APTIKAEV, F.F. (1996), *Some Correlation Relations between Parameters of Seismic Motions* // Journal of Earthquake Prediction Research, **5**, 5, pp. 257–267.
12. APTIKAEV, F.F., FROLOVA, N.I., UGAROV, A.N. (1997), *Extreme and Average Number of Death and Injuries for Risk Assessment* // Proc. IASPEI Assembly, Thessaloniki, Greece.
13. APTIKAEV, F.F., FROLOVA, N.I. (1998), *Extreme Estimation of Seismic Effect and Social Loses due to Earthquakes* // Proc. 26th Assembly of the ESC, Tel-Aviv, Israel, Aug. 1998.
14. APTIKAEV, F.F. (2000), *Problems Arising in the Construction of a New-Generation Seismic Intensity Scale* // Volc. Seis., **21**, pp. 433–441.
15. SHEBALIN, N.V., APTIKAEV, F.F. (2003), *Development of MSK Scales.* // Computational Seismology, Issue **34**, Moscow, GEOS, pp. 210–253 (in Russian).
16. SHERMAN, S.I., BERZHINSKY, YU.A., PAVLENOV, V.A., APTIKAEV, F.F. (2000), *Regional Seismic Intensity Scale for Lake Baikal Area.* Irkutsk, Institute of Earth Crust, 33 p.
17. SHERMAN, S.I., BERZHINSKY, YU.A., PAVLENOV, V.A., APTIKAEV, F.F. (2003), *Regional Seismic Intensity Scales.* Novosibirsk, “Geo”– Publ., pp. 189 (in Russian).