



Ali O. Oncel, PhD

Summary

Summary: Dr.Oncel was born and raised in Istanbul, Turkey on September 10, 1966 and has become **Canadian Resident** in May-2006, married and two kids. Dr. Oncel is a Seismologist and his experiences cover the parts of seismology in Engineering, Earthquake and Exploring, with particular emphasis on: (i) Geophysical Exploration (ii) Solid Earth Geophysics (iii) Seismotectonics; (iv) Seismic hazard analysis; and (v) Fractals in Geophysics (vi) Coulomb Stress Modeling and (vii) GPS-data Analyzing.

Contact address

Dr.Ali O. Öncel – King Fahd University Petroleum and Minerals
Earth Science Department, P.O. Box 1946, Saudi Arabia

Professional Experience

Assistant Professor 2004-present King Fahd University Petroleum and Minerals
Associate Professor 2000-2001 Geophysics-University of Istanbul
Research Assistant 1990-2000 Geophysics-University of Istanbul
Research Fellow Aug/Oct 1994 Int.Cent.Theor.Physics-Trieste/Italy
Guest Researcher, Sep/Dec 1993 Geophysics, Edinburgh University

Research awards

Research Fellow 1998–1999 Geological Survey of Japan-Tsukuba
Research Fellow 2001-2003 Seismology- Geological Survey of
Canada-Ottawa
Research Fellow 2003-2004 Active Fault Research Center-Geological
Survey of Japan- Tsukuba
Research Fellow 2007–2008 Kyoto University-Japan

Education

PhD Geophysics 1992 -1996 University of Istanbul
MSc Geophysics 1989–1992 University of Istanbul
BSc Geophysics 1985-1992 University of Istanbul

Teaching experience

Geophysical Exploration- Graduate
Solid Earth Geophysics- Graduate
Introduction to Seismology-Undergraduate
Introduction to Geophysics-Undergraduate
Senior Project-Undergraduate
Special Topics-Undergraduate

Professional Services

Peer Reviewer	Tectonophysics
Peer Reviewer	Geophysical Journal International
Peer Reviewer	ISET Journal of Earthquake Technology
Peer Reviewer	The Arabian Journal for Science and Engineer
Peer Reviewer	Journal of Asian Earth Sciences
Peer Reviewer	Journal of Seismology
Peer Reviewer	GeoArabia
Peer Reviewer	Natural Hazard
Peer Reviewer	BSSA

Chair	<u>International Cooperation</u>	2007-2008
Chair	<u>Research Committee</u>	2007-2008
Member	Academic Affairs	2004-2005
Member	Research Committee	2006-2007
Member	Faculty & Graduate Search Committee	2004-2005-2006
Member	Lab Safety Committee	2006-2007

Membership

American Geophysical Union- Regular Member
Seismological Society of America- Regular Member

Computing experience

- Programming in Fortran, and Windows environments, EXCELL, MATLAB, Macromedia, Adope Professional, Schlumberger.
- Developed websites using HTML, JavaScript, Perl/CGI, Dreamweaver, Flash.

Language

Fluent Turkish-English and a little Japanese.

Research/ Management Experience

Dr. Oncel managed a project as Principal Investigator titled "Microseismicity of Marmara Sea and Seismic Hazard, 1038-250897, 40 pp, completed, supported by *Research Foundation of Istanbul University*." Additional projects were funded by Geological Survey of Japan consisting of "Mapping the Fractal Nature of Seismicity and Seismic Hazards Active Faults in Turkey" in 1998 and "Seismicity and Earthquake Hazard on Active Faults Systems in Japan and Turkey" in 2003-2005. Dr.Oncel was also funded by the National Earthquake Hazards Program of Canadian Government in 2001-2003 for his individual project titled as "Induced-Stress Changes due to larger earthquakes in Canada". Through industry educational grants he has brought in software for ESD department of KFUPM educational and research uses from Seismic Micro-Technology.

Research Interest

Engineering Seismology: Refraction Seismic Tomography and Refraction Microtremor survey

Statistical Seismology: Non-linear/multifractal studies of earthquake and active fault systems and the interrelationships between variables to characterize seismotectonic systems ,

Faulting based Stress Modeling: Coulomb Stress Modeling of active faults and

Integrated Seismic Hazard based on data of Seismicity and GPS-derived strain.

Seismic Tomography and Shear Wave Modeling is my interest for future work. As consultant of Senior Project, I leaded a project on Seismic Tomography around our university campus based on the use of Seis-OPT software.

Scientific Projects

- Oncel, A.O.; Nishizawa, O, Shuhail, A (in preparation): **Fluctuation of Seismic Waves in Random Heterogeneous Media: A Physical Model Experiment.**
- Oncel, A.O.; Wilson, T., Hariri, M, (2006): **Monitoring of microseismic activity in Ghawar Field, Submitted to Saudi Aramco.**
- Öncel, A.O; Alptekin, Ö (1999):**Microseismicity of Marmara Sea and Seismic Hazard**, 1038-250897, 40 pp, completed, supported by *Research Foundation of Istanbul University*.

Scientific publications

1. **Oncel, A.O.,** Wilson, T., 2007. Anamalous seismotectonic interrelationships preceding the 1999 Izmit event, NW Turkey, 35 pages, Geophysical Journal International, Vol. 169, 259-271.

2. **Öncel, A.O.**, Wilson, T., 2006. *Evaluation of earthquake potential along the Northern Anatolian Fault Zone in the Marmara Sea using comparisons of GPS strain and seismotectonic parameters*, *Tectonophysics*, 418, pp. 215-218. **Paper listed in Science Direct Top25 most downloaded EPSL articles, April-June 2006.**
3. **Öncel, A.O.**, Wilson, T., 2004. *Correlation of seismotectonic variables and GPS strain measurements in western Turkey*, Journal of Geophysical Research-American Geophysical Union, 109, B11306, 13 pages.
4. Huang, Q., **Öncel, A.O.**, Sobolev, G.A., 2002. Precursory Seismicity Changes Associated with the M = 7.4 Izmit (Turkey) Earthquake, August 17, 1999, *Geophysical Journal International*, 151, 235-242.
5. **Öncel, A.O.**, Wilson, T., 2002. Space-Time Correlations of Seismotectonic Parameters and examples from Japan and Turkey Preceding the Izmit Earthquake, *Bulletin Seismological Society of America*, 92, 339-350.
6. **Öncel, A.O.**, Wyss, M., 2000. The major asperities of the 1999 M7.4 Izmit earthquake, defined by the microseismicity of the two decades before it, *Geophysical Journal International-OXFORD.*,143, 501-506.
7. **Öncel, A.O.**, Wilson, T., Nishizawa, O.,2001. Size Scaling Relations in the Active Fault Networks of Japan and their correlation with Gutenberg-Richter b-Values, *Journal of Geophysical Research-American Geophysical Union*,106, 21,827-21,841.
8. Kijko, A., **Öncel, A.O.**, 2000. Probabilistic Seismic Hazard Maps for Japanese Islands, *Journal of Soil Dynamics and Earthquake Engineering-Wessex Institute of Technology*, 20, 485-491.
9. Mostafazadeh, M., Alptekin, Ö., **Öncel, A.O.**, 2000. Body Waveform of Five Moderately Earthquakes in the Zagros Fold Thrust Belt, Vol 2, No 3, pp. 1-11, *Journal of Seismology and Earthquake Engineering-IEESC.*
10. **Öncel, A.O.**, Wyss, M., 2000. Mapping the major asperities by minima of local recurrence time before the 1999 M7.4 Izmit earthquake, Book on Izmit earthquake, pp. 1-4, The Izmit and Duzce Earthquakes: preliminary results, Editors: Aykut Barka, Ozgür Kozacı, Serdar Akyüz and Erhan Altunel, Publisher: *Istanbul Technical University*, ISBN: 975-561-182-7.
11. **Öncel, A.O.**, LaForge, R., Alptekin, Ö., 2000. Probabilistic Seismic Hazard for the North Anatolian Fault Zone Based on Areal Sources, *Book on Seismic Safety of Big Cities, in press.*
12. **Öncel, A.O.**, Alptekin, Ö., 1999. Effect of aftershocks on estimation of earthquake hazard parameters: An example from the north Anatolian fault zone, Vol 19, 1-11, *Natural Hazards-KLUWER ACADEMIC PUBLISHERS.*
13. **Öncel, A.O.**, Alptekin, Ö., Koral,H.,1998. The Dinar earthquake of october 1, 1996 (Mw=6.2) in southwestern Turkeyand earthquake hazard of the Dinar-Çivril fault, Vol. 152, 91-105, No:2; *Pure and Applied Geophysics-BIRKHAUSER.*
14. **Öncel, A.O.**, Main, I., Alptekin, Ö., Cowie, P., 1996. Spatial variations of the fractal properties of seismicity in the Anatolian Fault Zones, *Tectonophysics-ELSEVIER*, 257, 189-202.

Turkish Papers

Popular Papers

Citations

15. **Öncel**, A.O., Main, I., Alptekin, Ö., Cowie, P., 1996. Temporal variations of the fractal properties of seismicity in the north Anatolian fault zone between 31°E and 41°E, Vol.146, No.2, , 147-159, *Pure and Applied Geophysics-BIRKHAUSER*.
16. **Öncel**, A.O., Alptekin, Ö., Main, I., 1995. Temporal variations of the fractal properties of seismicity in the western part of the north Anatolian fault zone: possible artifacts due to improvements in station coverage, Vol.2, 147-157, *Nonlinear processes in Geophysics-European Geophysical Union*.
17. **Öncel**, A.O., Alptekin, Ö., 1995. Fractal distribution and its application in Seismology, *Geophysics-Turkish Geophysical Union*, 10, 11- 316, ISSN 0259-1472.
18. Koral, H., **Öncel**, A.O., 1995. Seismological and structural properties of Izmit and vicinity, *Geophysics-Turkish Geophysical Union*, 9, 10; 79-82, ISSN 0259-1472.
19. Alptekin, Ö., **Öncel**, A.O., 1993. Effects of Magnitude Errors in Seismic Risk Estimates and the Seismic Risk in Erzincan and Vicinity, *Geophysics-Turkish Geophysical Union*, 6, 85-102.
20. Alptekin, Ö., **Öncel**, A.O., Yörük, A., 1992. Estimation of Seismic Risk for the North Anatolian Fault Zone by Maximum likelihood Method, *Geophysics-Turkish Geophysical Union*, 6, 35-53.
21. **Öncel**, A.O., 2000. Microearthquakes in the Estimation of Large Earthquakes-Büyük Depremlerin Tahmininde Mikrodepremler, TÜBİTAK, Ekim, 90-93.
22. **Öncel**, A.O. (1995). Kobe Earthquake and Earthquake Hazard of Istanbul-Kobe earthquake and earthquake hazard in Istanbul, *Ultra Magazin*, monthly Journal, March, 1995, pp. 24-31

Citation Overview Citations received since 1996

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Institutional Seminars

1. Oncel, A.O., "Seismological studies: evaluating linkages between seismotectonic variables in Japan, Turkey and Canada", Earth Sciences Department of KFUPM, 2004.
2. Ocel, A.O., "Seismic source characterization defined by minima of local recurrence time before the 2003 MJ8.0 Tokachi-Oki Earthquake", Strong Motion Laboratory of Kyoto University, 2004.
3. Ocel, A.O., "The relationship of geodetic strain to seismicity on the island arc of Japan ", Active Fault Research Center of Geological Survey of Japan, 2004.
4. Ocel, A.O., "The relationship of geodetic strain to seismicity on the island arc of Japan", National Earthquake Hazards Program of Geological Survey of Canada, 2003.
5. Ocel, A.O., "Spatial and temporal correlation between seismicity and seismic velocity during compressional rock failure ", Rock Mechanics Laboratory-Geological Survey of Japan.

Conference Papers

1. Ocel, A.O., Wilson, T., "Correlation of seismotectonic variables and GPS strain measurements in western Turkey and the eastern Mediterranean", Seismological Society of America Meeting, ORAL, USA 2004.
2. **Oncel**, A.O., Aydan, O., 2003. Variations in GPS-derived displacement and stresses during the 2003 Miyagi earthquakes, International Colloquium on the instrumentation and monitoring of landslides and earthquakes in Japan and Turkey, ORAL, Koriyama, (H. Tano and Ö. **Aydan** (eds.)), 81-90.
3. **Oncel**, A.O., Wilson, T., 2003. Variations in GPS strain rate and their relationship to seismic hazard variables in western Turkey, American Geophysical Union Meeting, POSTER.
4. **Oncel**, A.O., Wilson, T., 2003. pace-time correlations of seismotectonic parameters: Examples from Japan and from Turkey preceding the Izmit earthquake, in *International Work Shop on North Anatolian, East Anatolian and Dead sea Fault Systems*, Ankara-Turkey, September 5, 2003., POSTER.
5. **Oncel**, A.O., 2002. Earthquake-induced static stress changes and the 1985 Nahanni earthquakes, Northwest Territories, Canada, American Geophysical Union Meeting, POSTER.
6. **Oncel**, A.O., Wilson, T., 2002. The relationship of microplate velocity field to seismotectonic variables: Example from western Turkey and the Eastern Mediterranean, Seismological Society of America Meeting, ORAL.
7. **Oncel**, A.O., Wilson, T., 2002. Space-time correlations of seismotectonic parameters: Examples from Japan and Turkey preceding the Izmit earthquake Seismological Society of America Meeting, POSTER.

8. Kijko, A., **Oncel**, A.O., 1999. Probabilistic Seismic Hazard Maps for Japanese Islands, Spring Meeting of Seismological Society of Japan, June 8-11, 1999, Tokyo, Japan, POSTER.
9. **Oncel**, A.O., LaForge, R., 1998. Probabilistic Seismic Hazard for the North Anatolian Fault Zone Based on Areal Sources, Fall Meeting of Seismological Society of Japan, October 26-28, 1998, Fukui, Japan, ORAL.
10. Mostafazadeh, M., Alptekin, O., **Oncel**, A.O., 1998. Waveform Modeling for Five Earthquakes in the Zagros Fold-Thrust Belt, Second meeting of Asian Commission and Symposium on Earthquake Hazard Assessment and Earth's Interior Related Topics, December 1-3, 1998, Abstracts, pp., 19, *Hyderabad, India*.
11. **Oncel**, A.O., LaForge, R., Alptekin, O., 1998. Probabilistic Seismic Hazard for the North Anatolian Fault Zone Based on Areal Sources, Abstracts, TMS 2 Hazard Assessment, September 21-25, Istanbul.
12. Kijko, A., Graham, G., **Oncel**, A.O., 1998. "Parametric – Historic" Procedure for Seismic Hazard Assessment and Its Application to the Istanbul Area, Abstracts, TMS 2 Hazard Assessment, September 21-25, Istanbul.
13. Mostafazadeh, M., Alptekin, Ö., **Öncel**, A.O., 1997. Source inversion of two moderately large earthquakes in the Taurus-Zagros thrust belt, *Annales Geophysicae*, Part I, pp.18, EGS 1997 meeting-*Viyana- Australia*.
14. **Öncel**, A.O., Alptekin, Ö., 1996. Fractal analysis of earthquake occurrence in the Strike-Slip Faulting of Turkey, *Earthquake Research in Türkiye*, Abstracts, pp., 50, *Ankara-Turkey*.
15. **Öncel**, A.O., Alptekin, Ö., 1996. Complexity of the strike-slip faulting of Turkey, *Earthquake Research in Türkiye*, Abstracts, pp., 21, *Ankara-Turkey*.
16. Koral, H., **Öncel**, A.O., 1996. Faulting and Seismicity in Izmit Bay, *Earthquake Research in Türkiye*, Abstracts, pp., 19, *Ankara-Turkey*.
17. Yüksel, A. and **Öncel**, A.O., 1996. Environmental problems caused by damaged earthquakes in Turkey, 103-108, *Proceedings of IX. Engineering week of the Süleyman Demirel University held on 29-31 May, Isparta-Turkey*.
18. **Oncel**, A.O., Alptekin, Ö., 1996. Effect of aftershocks on estimation of earthquake hazard parameters: An example from the north Anatolian fault zone, *Annales Geophysicae*, vol.14, pp.78, EGS 1996 meeting-*Hague- Netherlands*.
19. **Öncel**, A.O., Alptekin, Ö., Koral, H., 1996. The Dinar earthquake of October 1, 1996 ($M_L=5.9$) in southwestern Turkey and earthquake hazard of the Dinar-Çivril fault, Abstracts, pp., 28, *AGU Spring Meeting-Baltimore-USA*.
20. **Öncel**, A.O., Molchan, G., Alptekin, Ö., Kronrod, T., 1995. Estimation of seismic risk on the Anatolian fault zones, *Second International Turkish Geology Workshop*, 76, ISBN 975-7631-30-2, September 6-8, 1995, ISBN 975-7631-30-2, *Sivas-Turkey*.
21. **Öncel**, A.O., Yüksel, F.A., Alptekin, Ö., Main, I., Khalili, A., 1995. A preliminary fractal analysis of faulting in the Zagros thrust belt, *The 2nd International Conference on Seismology and Earthquake Engineering (SEE-2)- Tehran-IRAN*.

22. **Öncel**,A.O.,Main,I.,Alptekin,Ö.,Cowie,P.,1995. Fractal properties of faulting and seismicity in the Anatolian fault zones, *Annales Geophysicae*, vol.13, pp.560, EGS meeting-*Hamburg-Germany*.
23. **Öncel**, A.O., Alptekin, Ö., 1995. Fractal distribution and its application in Seismology, Nezihi Canitez Symposium. 82, 12-14 Nisan 1995, İstanbul-Turkey.
24. Koral,H., **Öncel**,A.O., 1995. Seismological and structural properties of Izmit and vicinity, Nezihi Canitez Symposium. 82, 12-14 Nisan 1995, ISSN 0259-1472, *Istanbul-Turkey*.
25. **Öncel**, A.O., Alptekin, Ö., 1995. Earthquake risk in Marmara Sea, Turkish National Union of Geodesy and Geophysics.General Assembly, Vol.3., pp.981-989, 1-5 May 1995- *Ankara-Turkey*.
26. Khalili, A., Yüksel,A.,**Öncel**,A.O.,1995. Deformation release on the dam of Karkheh (Iran) and vicinity, TJK, *Ankara-Turkey*.
27. **Öncel**,A.O.,Main,I.,Alptekin,Ö.,Cowie,P.,1994. Temporal-Variation of the fractal dimension of seismicity in the western part of the north Anatolian fault zone, 20 International Conference on the Mathematical Geophysics, Abstracts, pp., 67, *Nice-France*.
28. **Öncel**,A.O.,Main,I.,Alptekin,Ö.,1994. Temporal Variations in the Fractal Properties of Seismicity in the Northern Anatolian Fault Zone, 1st Turkish International Symposium on Deformations, September 5-9,1994, Abstracts, pp.72, *Istanbul-Turkey*.
29. Alptekin,Ö.,**Öncel**,A.O.,1993. Seismic Risk Estimates on the North Anatolian Fault Zone, presented at the 46.Geological Congress of Turkey at held on 5-10 April 1993, *Ankara-Turkey*.
30. Alptekin,Ö., **Öncel**,A.O.,Nalbant,S.,1993. Fractal Properties of The North Anatolian Fault Zone,Turkish National Union of Geodesy and Geophysics.General Assembly, 8-11 June 1993, *Ankara-Turkey*.
31. **Öncel**,A.O.,Alptekin,Ö.,Nalbant,S.,1993. Fractal Properties of Fault Systems-The North Anatolian Fault System, An Example. Symposium For The 25 th Anniversary of Earth Sciences at Hacettepe University,November,15-18 1993 in *Ankara-Turkey*.
32. Alptekin,Ö.,**Öncel**,A.O.,1993. Seismicity of Erzincan and Vicinity and Seismic Risk Estimates, Symposium For The 25 th Anniversary of Earth Sciences At Hacettepe University, November, 15-18 1993 in *Ankara-Turkey*.
33. Alptekin,Ö., **Öncel**,A.O.,Yörük,A.,1992. Maximum Likelihood Estimation of Seismic Risk for the North Anatolian Fault Zone, presented at 25 May 1992 in 7.Engineering week of the Mediterrian University held on 25-29 may 1992 in *Isparta-Turkey*.