



## Ali Osman Oncel, MS & PhD Geophysicist

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### PERSONAL DATA

Born: Istanbul, Turkey, September 10, 1966  
Citizenship: Turkey  
Resident: Canada

### SUMMARY OF SKILLS

Dr. Oncel is a Seismologist and his experiences cover the parts of Geophysics, with particular emphasis on: (i) Refraction Seismology (ii) Solid Earth Geophysics (iii) Seismotectonics; (iv) Seismic hazard analysis; and (v) Rock Physics. Dr. Oncel has published about 20 papers in refereed journals and 3 papers in refereed conference proceedings. One of his recent papers has been listed in the top 25 most downloaded articles in the Journal of Tectonophysics, 2006. Dr. Oncel has thought courses for different levels of Geophysics more than 5 years and led Senior Projects on Geophysics for 2 years. Expert in the use of system modelling tools for analysis, e.g. use cases, sequence diagrams, activity diagrams

### PROFESSIONAL EMPLOYMENT

2004-	Assistant Professor	King Fahd University Petroleum & Minerals
2000-2001	Associate Professor	Geophysics-University of Istanbul
1990-2000	Research Assistant	Geophysics-University of Istanbul
1993-	Guest Researcher	Geophysics, Edinburgh University

### HONORS

2007-2008	Fellow	Disaster Prevention Research Institute, <i>Kyoto University-Japan.</i>
2003-2004	Fellow	Active Fault Research Center, <i>Geological Survey of Japan- Tsukuba</i>
2001-2003	Fellow	National Earthquake Hazards Program, <i>Geological Survey of Canada-Ottawa</i>
1998-1999	Fellow	Exploration Geophysics Research, <i>Geological Survey of Japan</i>
1994-	Fellow	<i>International Center for Theoretical Physics -Trieste/Italy</i>
2006-2007		Listed in Marquis <i>Who's Who in Science and Engineering</i>
2008-2009		Listed in Marquis <i>Who's Who in Science and Engineering</i>

### EDUCATION

1992-1996	Ph.D. Geophysics	University of Istanbul
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1989-1992 M.S. Geophysical Engineering University of Istanbul  
 1985-1992 B.S. Geophysical Engineering. University of Istanbul

**LANGUAGES**

English-Fluent, Turkish-Native, Japanese-Poor

**COURSES THOUGHT**

Year	Quarter	Course Number	Course Title	Total Enrol.
2004	Fall	<u>GEOL581</u>	<u>Geophysical Exploration</u>	10
2004	Spring	<u>GEOP503</u>	<u>Solid Earth Geophysics</u>	6
2005	Fall	<u>GEOP204</u>	<u>Introduction to Seismology</u>	3
2006	Spring	<u>GEOP503</u>	<u>Solid Earth Geophysics</u>	1
2006	Fall	<u>GEOP402</u>	<u>Senior Project</u>	6
2006	Fall	<u>GEOP204</u>	<u>Introduction to Seismology</u>	10
2006	Spring	<u>GEOP202</u>	<u>Introduction to Geophysics</u>	5
2006	Spring	<u>GEOP480</u>	<u>Special Topics</u>	3
2006	Fall	<u>GEOP204</u>	<u>Introduction to Seismology</u>	11
2006	Spring	<u>GEOP405</u>	<u>Seminar</u>	5
2007	Fall	<u>GEOP402</u>	<u>Senior Project</u>	5
2008	Spring	<u>GEOP503</u>	<u>Solid Earth Geophysics</u>	1

**SERVICES**

Peer Reviewer Tectonophysics  
 Peer Reviewer Geophysical Journal International  
 Peer Reviewer Bulletin Seismological Society of America  
 Peer Reviewer Journal of Seismology  
 Peer Reviewer Journal of Asian Earth Sciences  
 Peer Reviewer The Arabian Journal for Science and Engineering  
 Peer Reviewer GeoArabia  
 Peer Reviewer Natural Hazard  
 Peer Reviewer ISET Journal of Earthquake Technology

Department of Earth Sciences

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

**PROFESSIONAL  
ACTIVITIES**

- 2008 Seminar *Fluid Effects on Time-Lapse Seismic Velocity: An Experimental Study*, Earth Sciences Department of KFUPM
- 2007 Chair *A Session in the Annual Meeting of American Geophysical Union on "Microns to Meters and Milliseconds to Months: Integrating High-Rate GPS, Seismic, Tilt, and Strain Data"*
- 2004 Seminar Seismological studies: evaluating linkages between seismotectonic variables in Japan, Turkey and Canada, Earth Sciences Department of KFUPM
- 2004 Seminar 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 Seminar The relationship of geodetic strain to seismicity on the island arc of Japan, Active Fault Research Center of Geological Survey of Japan
- 2003 Seminar The relationship of geodetic strain to seismicity on the island arc of Japan, National Earthquake Hazards Program of Geological Survey of Canada
- 1999 Seminar Spatial and temporal correlation between seismicity and seismic velocity during compressional rock failure, Rock Mechanics Laboratory-Geological Survey of Japan.

**MEMBERSHIP**

- AGU: American Geophysical Union- Regular Member
- SSSA: Seismological Society of America – Regular Member
- DGS: Dhahran Geosciences Society

**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** Estimating 2D P-wave velocity and Shear wave velocity.

<b>Statistical Seismology</b>	Analysis of seismotectonic data, e.g., fault data, seismicity data and GPS strain derived strain data, for Understanding interrelationships between seismotectonic variables.
<b>Fault Interaction</b>	Understanding long-term rate stressing rate through faults and interaction mechanism between neighbor faults by Coulomb Stress Modeling.
<b>Integrated Seismic Hazard</b>	Integrating seismicity and GPS data to increase accuracy of seismic hazard estimates.
<b>4D Seismology</b>	Interaction mechanism between fluid and seismic waves in time and understand physical changes of heterogeneity in space.

## PROJECTS

Oncel, A.O. *Fluid Effects of 4D Seismic Wave Propagation through Rocks*, Geological Survey of Japan, 2007, supported by Japan Petroleum Institute.

Oncel, A.O. *Forecasting Study for Seismic Mechanism in Saudi Arabian Oil Fields Area*, DPRI, Kyoto University, Supported by Japan Petroleum Institute.

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.

## PUBLICATIONS

- 2007 Oncel, A.O., Wilson, T., Anamalous seismotectonic interrelationships preceding the 1999 Izmit event, NW Turkey, 35 pages, Geophysical Journal International, Vol. 169, 259-271.
- 2006 Oncel, A.O., Wilson, T.. *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.
- Oncel, A.O., Wilson, T., *Correlation of seismotectonic variables and GPS strain measurements in western Turkey*, Journal of Geophysical Research-American Geophysical Union, 109, B11306, 13 pages.

- 2004 Huang, Q., **Öncel**, A.O., Sobolev, G.A.,. Precursory Seismicity Changes Associated with the M = 7.4 Izmit (Turkey) Earthquake, August 17, 1999, *Geophysical Journal International*, 151, 235-242.
- 2002 **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.
- 2001 **Öncel**, A.O., Wilson, T., Nishizawa, O.. 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.
- 2000 **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.  
Kijko, A., **Öncel**, A.O.. Probabilistic Seismic Hazard Maps for Japanese Islands, *Journal of Soil Dynamics and Earthquake Engineering-Wessex Institute of Technology*, 20, 485-491.  
Mostafazadeh, M., Alptekin, Ö., **Öncel**, A.O., 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*.  
**Öncel**, A.O., Wyss, M., 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.
- 1999 **Öncel**, A.O., Alptekin, Ö., 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*.
- 1998 **Öncel**, A.O., Alptekin, Ö., Koral, H., The Dinar earthquake of October 1, 1996 (Mw=6.2) in southwestern Turkey and earthquake hazard of the Dinar-Çivril fault, Vol. 152, 91-105, No:2; *Pure and Applied Geophysics-BIRKHAUSER*.
- 1996 **Öncel**, A.O., Main, I., Alptekin, Ö., Cowie, P., Spatial variations of the fractal properties of seismicity in the Anatolian Fault Zones, *Tectonophysics-ELSEVIER*, 257, 189-202.  
**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*.
- 1995 **Öncel**, A.O., Alptekin, Ö., Main, I., 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*.  
**Öncel**, A.O., Alptekin, Ö., Fractal distribution and its application in Seismology, *Geophysics-Turkish Geophysical Union*, 10, 11- 316, ISSN 0259-1472.

- 1992 Alptekin,Ö.,**Öncel**, A.O.,Effects of MagnitudeErrors in Seismic Risk Estimates and the Seismic Risk in Erzincan and Vicinity, *Geophysics-Turkish Geophysical Union*, 6,85-102.  
Alptekin,Ö.,**Öncel**,A.O., Yörük,A.,. Estimation of Seismic Risk for the North Anatolian Fault Zone by Maximum likelihood Method, *Geophysics-Turkish Geophysical Union*, 6,35-53.

## POPULAR PAPERS

- 2000 **Öncel**, A.O., Microearthquakes in the Estimation of Large Earthquakes-Büyük Depremlerin Tahmininde Mikrodepremler, TÜBİTAK, Ekim,90-93.  
1995 **Öncel**, A.O., Kobe earthquake and earthquake hazard in Istanbul, *Ultra Magazin*, monthly Journal, Mach, pp. 24-31

## CITATIONS

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ABSTRACTS  
PUBLISHED

- 2004 **Oncel**, 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.  
2003 **Oncel**, A.O., Aydan, O., 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.  
**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.

- 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.
- 2002** **Oncel, A.O.,** Earthquake-induced static stress changes and the 1985 Nahanni earthquakes, Northwest Territories, Canada, American Geophysical Union Meeting, POSTER.  
**Oncel, A.O., Wilson, T.,** The relationship of microplate velocity field to seismotectonic variables: Example from western Turkey and the Eastern Mediterranean, Seismological Society of America Meeting, ORAL.  
**Oncel, A.O., Wilson, T.,** Space-time correlations of seismotectonic parameters: Examples from Japan and Turkey preceding the Izmit earthquake Seismological Society of America Meeting, POSTER.
- 1999** Kijko, A., **Oncel, A.O.,** Probabilistic Seismic Hazard Maps for Japanese Islands, Spring Meeting of Seismological Society of Japan, June 8-11, 1999, Tokyo, Japan, POSTER.
- 1998** **Oncel, A.O., LaForge, R.,** 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.  
 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.*  
**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.  
 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.
- 1997** Mostafazadeh, M., Alptekin, Ö., **Öncel, A.O.,** Source inversion of two moderately large earthquakes in the Taurus-Zagros thrust belt, *Annales Geophysicae*, Part I, pp.18, EGS 1997 meeting- *Viyana- Australia.*
- 1996** **Öncel, A.O., Alptekin, Ö.,** Fractal analysis of earthquake occurrence in the Strike-Slip Faulting of Turkey, *Earthquake Research in Türkiye*, Abstracts, pp., 50, *Ankara-Turkey.*  
**Öncel, A.O., Alptekin, Ö.,** Complexity of the strike-slip faulting of Turkey, *Earthquake Research in Türkiye*, Abstracts, pp., 21, *Ankara-Turkey.*  
 Koral, H., **Öncel, A.O.,** Faulting and Seismicity in Izmit Bay, *Earthquake Research in Türkiye*, Abstracts, pp., 19, *Ankara-Turkey.*  
 Yüksel, A. and **Öncel, A.O.,** 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.*  
**Oncel, A.O., Alptekin, Ö.,** 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.*

- 1995** **Öncel**, A.O., Alptekin, Ö., Koral,H., 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*.
- Öncel**, A.O., Molchan, G., Alptekin, Ö.,Kronrod,T., 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*.
- Öncel**, A.O.,Yüksel,F.A.,Alptekin,Ö.,Main,I.,Khalili,A.,A preliminary fractal analysis of faulting in the Zagros thrust belt, The 2nd International Conference on Seismology and Earthquake Engineering (SEE-2)-*Tehran-IRAN*.
- Öncel**,A.O.,Main,I.,Alptekin,Ö.,Cowie,P., Fractal properties of faulting and seismicity in the Anatolian fault zones, Annales Geophysicae, vol.13, pp.560, EGS meeting-*Hamburg-Germany*.
- Öncel**, A.O., Alptekin, Ö.,Fractal distribution and its application in Seismology, Nezihî Canitez Symposium. 82, 12-14 Nisan 1995, İstanbul-Turkey.
- Koral,H., **Öncel**,A.O., Seismological and structural properties of Izmit and vicinity, Nezihî Canitez Symposium. 82, 12-14 Nisan 1995, ISSN 0259-1472, *Istanbul-Turkey*.
- Öncel**, A.O., Alptekin, Ö.,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*.
- Khalili, A., Yüksel,A.,**Öncel**,A.O.,Deformation release on the dam of Karkheh (Iran) and vicinity, TJK, *Ankara-Turkey*.
- 1994** **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*.
- Öncel**,A.O.,Main,I.,Alptekin,Ö.,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*.
- 1993** Alptekin,Ö.,**Öncel**,A.O.,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*.
- Alptekin,Ö., **Öncel**,A.O.,Nalbant,S.,Fractal Properties of The North Anatolian Fault Zone,Turkish National Union of Geodesy and Geophysics.General Assembly, 8-11 June 1993, *Ankara-Turkey*.
- Öncel**,A.O.,Alptekin,Ö.,Nalbant,S., 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*.
- Alptekin,Ö.,**Öncel**,A.O.,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*.
- 1992** Alptekin,Ö., **Öncel**,A.O.,Yörük,A., Maximum Likelihood Estimation of Seismic Risk for the North Anatolian Fault Zone, presented at 25 May 1992 in 7.Engineering week of the Meditterrian University held on 25-29 may 1992 in *Isparta-Turkey*.