

# Ali O. Oncel

## Summary

Engineering and Earthquake seismologist, with particular emphasis on: (i) earthquake prediction; (ii) seismotectonics; (iii) seismic hazard analysis; and (iv) fractal analysis of faulting and seismicity (v) coulomb stress modelling.

## Academic experience

1990 - 2000 *Dept. Geophysical Engineering, University of Istanbul*

### Research Assistant in Geophysics

- Initiated and managed research projects in seismology and seismotectonics, including seismic hazard and fault mechanics. Taught courses in geophysics, seismology, seismotectonics and elastic wave propagation.

1993 - 1994 *Dept. Geology & Geophysics, University of Edinburgh*

### Guest Researcher

- Undertook research in seismology ; modelling on fractal analysis of seismicity.

1994 - 1995 *ICTP-Italy*

### Research Fellow

Undertook research in seismic hazard analysis.

1998 - 1999 *Dept. Geophysics, Geological Survey of Japan-Tsukuba*

### Research Fellow

- Undertook research in seismology, space-time correlations of seismotectonic parameters.

2001 - 2003 *Dept. Seismology, Geological Survey of Canada-Ottawa*

- Undertook research in seismology ; coulomb stress modelling.

2003- *Dept. Earth Science, King Fahd University of  
Petroleum and Minerals*

### Asistant Professor

## Education

1992 - 1996 *University of Istanbul*

### PhD Geophysics

- Thesis title “Fractal Analysis of Faulting and Seismicity in the Anatolian Fault Zones”.

1989 - 1992 *University of Istanbul*

### MSc Geophysics

- Thesis title “Statistical Analysis of Earthquakes in the North Anatolian Fault Zone”.

1985-1992 *University of Istanbul*

## BSc Geophysics

### References

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Omer Alptekin, Professor <a href="mailto:alptekin@istanbul.edu.tr">alptekin@istanbul.edu.tr</a> (90)212-6763636 (90)212 -591 19 97x1144 Engineering Faculty,Geophysics, Istanbul University,	John Adams, Head National Earthquake Hazards Program-East <a href="mailto:adams@seismo.nrcan.gc.ca">adams@seismo.nrcan.gc.ca</a> Tel: 613-995-5519 Fax: 613-9928836 Geological Survey of Canada

### Scientific publications

1. **Öncel**, A.O., Harris, R., 2003. Earthquake-induced static stress changes and the 1985 Nahanni earthquakes, Northwest Territories, Canada, Geophysical Research Letter, submitted.
2. **Öncel**, A.O., Wilson, T., 2002. Correlation of seismotectonic variables and microplate velocity in western Turkey and the Eastern Mediterranean, *Bulletin Seismological Society of America*, submitted.
3. 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*, in press.
4. **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.
5. **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.
6. **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.
7. 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.
8. [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.](#)
9. **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*.

10. **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.
11. **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*.
12. **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*.
13. **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.
14. **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*.
15. **Öncel**,A.O.,Alptekin,Ö., Main,I.,1995.Temporal variations of the fractal properties of seismicity in the western part of the northAnatolian fault zone:possible artifacts due to improvements in station coverage,Vol.2,147-157, *Nonlinear processes in Geophysics-European Geophysical Union*.

#### Turkish Papers

16. **Öncel**, A.O., Alptekin, Ö., 1995.Fractal distribution and its application in Seismology, *Geophysics-Turkish Geophysical Union*,10, 11- 316, ISSN 0259-1472.
17. 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.
18. Alptekin,Ö.,**Öncel**, A.O.,1993.Effects of MagnitudeErrors in Seismic Risk Estimates and the Seismic Risk in Erzincan and Vicinity, *Geophysics-Turkish Geophysical Union*, 6,85-102.
19. 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.

#### Turkish Popular Papers

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

## Scientific Projects

- 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*.
- **The relationship of geodetic strain to seismicity on the Island arc of Japan:** Colloborative Research with Dr.Ali Osman Öncel and Thomas Wilson, Submitted to United States Geological Survey, April-2002.

## Computing experience

- Programming in Fortran, in UNIX and Windows environments, EXCELL, MATLAB.
  - Developed websites using HTML, JavaScript, Perl/CGI, Dreamweaver, Flash.
- Fluent Turkish-English and a little Japanese.

## Languages

## Conference Papers

1. [Oncel, A.O., Harris, R., 2002. Earthquake-induced static stress changes and the 1985 Nahanni earthquakes, Northwest Territories, Canada, American Geophysical Union Meeting, POSTER.](#)
2. [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.](#)
3. [Oncel, A.O., Wilson, T., 2002. Space-time correlations of seismotectonic parameters: Examples from Japan and Turkey preceeding the Izmit earthquake Seismological Society of America Meeting, POSTER.](#)
4. 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.
5. 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.
6. Mostafazadeh, M., Alptekin, O., Oncel, A.O., 1998. Waveform Modeling for Five Earthquakes in the Zagros Fold-Thrust Belt, Second meeting of Asian Commision and Symposioun on Earthquake Hazard Assessment and Earth's Interiour Related Topics, December 1-3, 1998, Abstracts, pp., 19, *Hyderabad, India*.
7. 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.
8. 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.

9. 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*.
10. 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*.
11. Öncel, A.O., Alptekin, Ö., 1996. Complexity of the strike-slip faulting of Turkey, *Earthquake Research in Türkiye*, Abstracts, pp., 21, *Ankara-Turkey*.
12. Koral, H., Öncel, A.O., 1996. Faulting and Seismicity in Izmit Bay, *Earthquake Research in Türkiye*, Abstracts, pp., 19, *Ankara-Turkey*.
13. 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*.
14. Öncel, 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*.
15. 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*.
16. 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*.
17. 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*.
18. 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*.
19. Öncel, A.O., Alptekin, Ö., 1995. Fractal distribution and its application in Seismology, *Nezihi Canitez Symposium*. 82, 12-14 Nisan 1995, *İstanbul-Turkey*.
20. 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*.
21. 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*.

22. Khalili, A., Yüksel,A.,Öncel,A.O.,1995. Deformation release on the dam of Karkheh (Iran) and vicinity, TJK, *Ankara-Turkey*.
23. 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*.
24. 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*.
25. 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*.
26. 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*.
27. 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*.
28. 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*.
29. 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*.