**İSMAİL DEMİRCİ**

Ankara University, Faculty of Engineering, Department of Geophysical Engineering, Geophysical Modelling Group, 06830 Gölbaşı, Ankara, Turkey

Email: idemirci@eng.ankara.edu.tr

Tel: 090 312 600 01 00/ 1829 - 0090 544 481 08 51

**ACADEMIC QUALIFICATIONS**

2009-2015 Ankara University, Institute of Science, Department of Geophysical Engineering (PhD degree)

2007-2009 Ankara University, Institute of Science, Department of Geophysical Engineering (MSc degree)

2002-2006 Ankara University, Faculty of Engineering, Department of Geophysical Engineering (Graduate degree)

1998-2002 Zonguldak Mehmet Çelikel Anatolian High School

**EMPLOYMENT**

2009-Present Ankara University, Faculty of Engineering, Department of Geophysical Engineering (Research Assistant)

 2007-2009 Ankara University, Faculty of Engineering, Department of Geophysical Engineering (Project Scholarship Holder)

**THESIS**

02-2015 Joint Inversion of Seismology and Magnetotelluric Data (PhD Thesis, Supervisor: Assoc. Prof. Dr. Ünal DİKMEN)

01-2009 Incorporation of Topography into Two-Dimensional Direct Current Resistivity and Magnetotelluric Inversion by Using Finite Difference Method with Triangular Cells (MSc Thesis, Supervisor: Prof. Dr. M. Emin CANDANSAYAR)

##### 06-2006 Two-Dimensional Inversion of the Direct Current Resistivity Data with Damped Least Squares Method (Undergraduate Thesis-2, Supervisor: Prof. Dr. M. Emin CANDANSAYAR)

##### 01-2006 Two-Dimensional Modelling of Direct Current Resistivity Data with Finite Difference Method (Undergraduate Thesis-1, Supervisor: Prof. Dr. M. Emin CANDANSAYAR)

**PUBLICATIONS**

**Demirci, İ.,** Dikmen, Ü., and Candansayar, M. E., 2017. Two-Dimensional Joint Inversion of Magnetotelluric and Local Earthquake Data: Discussion on the Contribution to the Solution of Deep Subsurface Structures. [Physics of the Earth and Planetary Interiors](https://www.sciencedirect.com/science/journal/00319201), <https://doi.org/10.1016/j.pepi.2018.01.006>.

Özyıldırım, Ö., Candansayar, M.E., **Demirci, İ.,** Tezkan, B., 2017. Two dimensional inversion of MT/RMT data by using unstructured mesh. Geophysics, 82(4), 1-52.

**Demirci, İ.,** Candansayar, M. E., Vafidis, A., and Soupios, P. 2017. Two dimensional joint inversion of direct current resistivity, radio-magnetotelluric and seismic refraction data: An application from Bafra Plain, Turkey. *Journal of Applied Geophysics*, *139*, 316-330.

Dikmen, Ü., Hamzaçebi, N., Arısoy, M. Ö., and **Demirci, İ.,** 2016. Estimation of source, path and site effect from s-waves of local earthquakes in IZMIR, western TURKEY, Jeofizik, 18, 14-35.

**Demirci, İ.,** Erdoğan, E., and M. E. Candansayar, 2012, Two-dimensional inversion of direct current resistivity data incorporating topography by using finite difference techniques with triangle cells: Investigation of Kera fault zone in western Crete: Geophysics, 77, E67-E75.

Erdoğan, E., **Demirci, İ.,** M. E. Candansayar, 2008. Incorporating Topography into Two Dimensional Resistivity Modeling Using Finite-Element and Finite-Difference Approaches. Geophysics, 73, F135-F142.

**CONFERENCE PAPERS and PRESENTATIONS**

**Demirci, İ.,** Candansayar, M.E., Soupios, P., Vafidis, A., Arslan, H., and Gündoğdu, N.Y., 2017.Interpretation of Geophysical Data for Saltwater Intrusion On Bafra Plain Guided by Hydrogeological and Hydrochemical Data. 9th Congress of the Balkan Geophysical Society, Antalya, TURKEY.

[Gundogdu](http://earthdoc.eage.org/publication/search/?pubauthorname=N.Y.|Gundogdu), N. Y., **Demirci, İ.,** Demirel, C., and Candansayar, M.E.,2017. Determination of Bridge Foot Foundations Using DCR Method. 9th Congress of the Balkan Geophysical Society, Antalya, TURKEY.

[Gundogdu](http://earthdoc.eage.org/publication/search/?pubauthorname=N.Y.|Gundogdu), N. Y., **Demirci, İ.,** Varilsüha, D., Candansayar, M.E., Yılmaz, A.E., 2016. [Acceleration of Three-dimensional Direct Current Resistivity Modelling Using GPU Computing](http://earthdoc.eage.org/publication/publicationdetails/?publication=86634). [*22nd European Meeting of Environmental and Engineering Geophysics*](http://earthdoc.eage.org/publication/search/?pubedition=495), Barcelona, Spain.

**Demirci, İ.,** Candansayar, M.E., Soupios, P., Vafidis, A., 2016. Joint Inversion of Direct Current Resistivity, Radio Magnetotelluric and Seismic Refraction Data: its implementation on hydrogeological problems. *23rd International Workshop on Electromagnetic Induction in The Earth*, Chiang Mai, Thailand.

Candansayar, M.E., **Demirci, İ.,** [Gundogdu](http://earthdoc.eage.org/publication/search/?pubauthorname=N.Y.|Gundogdu), N. Y., Varilsüha, D., Yılmaz, A.E., 2016. Two dimensional joint inversionof Magnetotelluric and Passive Seismic data on GPU. *23rd International Workshop on Electromagnetic Induction in The Earth*, Chiang Mai, Thailand.

Candansayar, M. E., **Demirci, İ.,** Vafidis, A., Soupios, P., Economou, N., Andronikidis, N., Arslan, H., 2015. Two Dimensional Joint Inversion of Seismic refraction, Radiomagnetotelluric and DC Resistivity Data: an example from Bafra plain, Turkey. [*8th Congress of the Balkan Geophysical Society*](http://earthdoc.eage.org/publication/search/?pubedition=464), Chania, Greece.

Hamdan, H., Candansayar, M.E., **Demirci, İ.,** Economou, N., Andronikidis, N., Arslan, H., Soupios, P., Vafidis, A., 2015. Imaging the saline/fresh water interface at Bafra, Samsum, Turkey using joint inversion of seismic refraction and direct current electricity data. *International Conference on Engineering Geophysics*, Al Ain, United Arab Emirates.

**Demirci, İ.,** Dikmen, Ü., Candansayar, M. E., 2014. Joint Inversion of Magnetotelluric and Local Earthquake Data: Preliminary Results. *22nd International Workshop on Electromagnetic Induction in The Earth*, Weimar, Germany.

Candansayar M.E., Tezkan B., Özyildirim Ö., Adrian J., **Demirci İ.,** 2014. 2D Joint Inversion of Radio-Magnetotelluric and DC Resistivity Data Incorporating Surface Topography and Sequential Inversion of IP Data. *22nd International Workshop on Electromagnetic Induction in The Earth*, Weimar, Germany.

**Demirci, İ.,** Dikmen, Ü., 2013. A new algorithm for 2-D Inversion of cross hole seismic refraction data and preliminary results*.* [*19th International Petroleum and Natural Gas Congress and Exhibition of Turkey*](http://earthdoc.eage.org/publication/search/?pubedition=380) , Ankara, Turkey.

**Demirci, İ.,** Erdoğan, E., and M.E. Candansayar, 2012. Two-dimensional Inversion of DC Resistivity Data Incorporating Topography: Effects of Different Modelling Techniques. *21st International Workshop on Electromagnetic Induction in The Earth*, Darwin, Australia.

**Demirci, İ.,** Candansayar, M. E., 2010. Two-Dimensional Inversion of Magnetotelluric and Radio Magnetotelluric Data Incorporating Topography by Using Finite Difference Method with Triangle Cells. *20th International Workshop on Electromagnetic Induction in The Earth*, Giza, Egypt.

Candansayar, M. E, Kaya, C., Dikmen, Ü., Gürer, A., Konak, N., Başokur, A. T., Kiliç, A. R., Erdoğan, E., **Demirci, İ.,** Özyıldırm, Ö., Akin, U., Arslan, S., Kadioğlu, Y. K., Yilmaz, H., Ulugergerli, E. U., Okay, H., 2010. Crustal Structure of Northwestern Turkey, Revealed by Magnetotelluric Surveys with the Help of Seismology, Gravity and Magnetic Data. *20th International Workshop on Electromagnetic Induction in The Earth*, Giza, Egypt.

Candansayar, M. E, Kaya, C., Konak, N., Kılıç, A.R., Dikmen, Ü., **Demirci, İ.,** Erdoğan, E., Özdemir, Ö., Hacisalihlioğlu, Ö., Adıgüzel, A., Bostan, S., Akın, U., Arslan, S., Gürer, A., Üçer, A., Kadıoğlu, Y.K., Yılmaz, H., Başokur, A.T., Okay, H., 2009. Investigation of crust structure along Zonguldak-Akşehir transect with magnetotellurics method. *Second international symposium on the geology of the black sea region*, Ankara, TURKEY.

Erdoğan, E., **Demirci, İ.,** Candansayar, M. E., 2008. Incorporation topography into two dimensional resistivity modeling by using finite difference numerical technique with triangular descritization: comparison with finite element solution. *19th International Workshop on Electromagnetic Induction in The Earth,* Beijing, China.

**Demirci, İ.,** and Candansayar, M. E., 2008. Incorporation of Topography into Models Using Finite Difference Modeling with Triangular Discretization and Correction Procedure for Inversion Algorithm. *19th International Workshop on Electromagnetic Induction in The Earth*, Beijing, China.

Kaya, C., Candansayar, M. E, Kiliç, A. R., Gürer, A., Dikmen, Ü., Yilmaz, H., Kadioğlu, Y. K., Ulugergerli, E. U., Akin, U., Arslan, S., Konak, N., Başokur, A. T., **Demirci, İ.,** Erdoğan, E., Kaçmaz, F., Özyıldırm, Ö., Kaypak, B., Okay, H., 2008. NW\_Anatolia\_CSGM Project: an investigation of N-W Anatolian Crust Structure by using Geophysical Methods: Profile-1. *19th International Workshop on Electromagnetic Induction in The Earth*, Beijing, China.

Candansayar, M. E, Kaya, C., Gürer, A., Kiliç, A. R., Dikmen, Ü., Kadioğlu, Y. K., Ulugergerli, E. U., Akin, U., Arslan, S., Konak, N., Yilmaz, H., Başokur, A. T., **Demirci, İ.,** Erdoğan, E., Kaçmaz, F., Özyıldırm, Ö., Okay, H., Kaypak, B., 2008. Nw\_Anatolia\_Csgm Project: An Investigation of N-W Anatolian Crust Structure by Using Geophysical Methods. *19th International Workshop on Electromagnetic Induction in The Earth*, Beijing, China.

Erdoğan, E., **Demirci, İ.,** Candansayar, M. E., 2007. Incorporating topography into 2d resistivity modelling by using finite-element and finite-difference approaches. *Near Surface Geophysics*, İstanbul, Turkey.

**Demirci, İ.,** Candansayar, M. E., 2007. Incorporation of topography into two dimensional resistivity inversion models by using finite difference modelling with triangular discretization. *Near Surface Geophysics*, İstanbul, Turkey.

**Demirci, İ.,** Candansayar, M. E., 2006. Comparison of the different sensitivity matrix calculation methods in 2d inversion of the direct current resistivity data. 17th International Geophysical Congress and Exhibition of Turkey, Ankara, TURKEY.

**PROJECT EXPERIENCES**

|  |  |  |  |
| --- | --- | --- | --- |
| Name of the Project | Dates | Task in the Project | Project Type |
| An Investigation of N-W Anatolian Crust Structure by using Geophysical Methods and Interpretation in terms of Seismicity of the Region | **01.07.2006-01.01.2011** | **Project Assistant** | **National** |
| Geophysical Based Hydrogeological Modelling to Prevent Pollution from Seawater Intrusion at Coastal Areas | **01.02.2012-01.02.2015** | **Project Assistant** | **International** |
| 2D Joint Inversion and 3D inversion of Geophysical Data on GPU Platform | **01.11.2014-01.11.2016** | **Researcher** | **National** |

**RESEARCH TECHNIQUES**

I am experienced and competent in the collection of field data on Magnetotelluric, Radio-Magnetotelluric, Transient Electromagnetic, Direct Current Resistivity and Seismic Refraction Methods. I am also experienced on data analyses on Magnetotelluric methods. During my education life, I have developed many 2-D modelling (Direct current resistivity, Magnetotelluric, Seismic Refraction and Seismic Reflection) and inversion (Direct current resistivity, Magnetotelluric, Seismic Refraction) algorithm. My main interest is about joint inversion of multiple datasets and Magnetotelluric field investigations.

**INTERESTS and ADDITIONAL SKILLS**

**Teaching:**

I am working as a research assistant and giving some applied courses to undergraduate students. Some of the courses

* Spectral Analyses
* Digital Filtering
* Numerical Modelling
* Geophysical Data Inversion
* Electrical Prospecting
* Electromagnetic Prospecting

**Administration:**

Throughout my career I have taken responsibility for a range of administrative duties. Some of those

05-09.11.2017 9th Congress of the Balkan Geophysical Society (Organization Committee member as Technical Chairman-International Conference)

2012-Present Jeofizik Bülteni (Editorial Board Member- National Publication)

17-19.09.2012 International Geophysical Conference and Oil and Gas Exhibition (Organization Committee member as responsible to Publicity and Promotions-International Conference)

24-26.05.2010 3. Yer Elektrik Çalıştayı (Organization Committee Member-National Conference)