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GEOHERMAL TRAINING PROGRAMME

## LIST OF PUBLICATIONS OF THE UNU GEOTHERMAL TRAINING PROGRAMME, ICELAND

1979–2017

2017

Omarsdottir, M., Opondo, K., Malimo, S., Haraldsson, I.G., and Georgsson, L.S., (Ed.), 2017: Papers and presentations at “Short Course X on exploration for geothermal resources”. Organized by UNU-GTP, KenGen and GDC, Lake Bogoria and Naivasha, Kenya, 9. – 30. Nov., 2015 CD, UNU-GTP SC-21, ISBN 978-9979-68-349-0.

Includes:

Georgsson, L.S., 2015: Geophysical methods used in geothermal exploration, 16 pp.

Georgsson, L.S., 2015: Geothermal energy in the world from energy perspective, 12 pp.

Georgsson, L.S. and Karlsdottir, R., 2015: Resistivity methods: DC and TEM with examples and comparison from the Reykjanes peninsula and Öxarfjörður, Iceland, 14 pp.

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Haraldsson, I.G., 2016: Námskeið Jarðhitaskólans til stuðnings Heimsmarkmiðum Sameinuðu þjóðanna. Heimsljós – veftímarit um þróunarmál, 9. árg, 309. tbl. Gefið út af utanríkisráðuneytinu.

Georgsson, L.S. and Haraldsson, I.G., 2016: Taking African geothermal knowledge to a higher level – Training activities of UNU-GTP in Africa. Proceedings 6th African Rift Geothermal Conference, Addis Ababa, Ethiopia, 10 pp.

Haraldsson, I.G., 2016: Short course on well design and geothermal drilling technology in the Republic of Djibouti. For the Ministry for Foreign Affairs. UNU-GTP/CR-1601, 7 pp. + appendices.

Haraldsson, I.G., 2016: Short course on borehole geophysics for geothermal development in Ethiopia. For the Ministry for Foreign Affairs. UNU-GTP/CR-1602, 8 pp. + appendices.

Haraldsson, I.G., 2016: ARGeo-C6 short course 1 on project management for geothermal development. For the Ministry for Foreign Affairs. UNU-GTP/CR-1603, 9 pp. + appendices.

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Otieno, V.O., 2016: Borehole Geology and Sub-Surface Petrochemistry of the Domes Area, Olkaria Geothermal Field, Kenya, in Relation to Well Ow-922. University of Iceland, MSc thesis, UNU-GTP report 2, 84 pp,

Mbithi, U.K., 2016: Interpretation of Feed Zones to Map Sub-Surface Permeability Structures and Natural State Simulation: A Case Study of Olkaria Domes Geothermal System in Kenya. University of Iceland, MSc thesis, UNU-GTP report 3, 54 pp.

Mgejwa, N.M., 2016: Sub-surface geology, petrochemistry and hydrothermal alteration of Wells MW-03, MW-09 and MW-20 from Menengai geothermal field, Kenya. University of Iceland, MSc thesis, UNU-GTP report 4, 111 pp.

Munyiri, S.K., 2016: Structural Mapping of Olkaria Domes Geothermal Field Using Geochemical Soil Gas Surveys, Remote Sensing and GIS. University of Iceland, MSc thesis, UNU-GTP report 5, 100 pp.

Worku Sisay, S., 2016: Sub-Surface Geology, Hydrothermal Alteration and 3D Modeling of Wells LA-9D and LA-10D in the Aluto Langanu Geothermal Field, Ethiopia. University of Iceland, MSc thesis, UNU-GTP report 6, 95 pp.

Koenig, J., 2016: Lectures on geothermal resources and their development. Reykjavík: Orkustofnun, UNU-GTP report 7. 55 pp.

Haraldsson, I.G., de Arévalo, A.S.A., de Henriquez, E., and Omarsdottir, M., (Ed.), 2016: Papers presented at "SDG Short course I on sustainability and environmental management of geothermal resource utilization and the role of geothermal in combating climate change", organized by UNU-GTP and LaGeo in Santa Tecla, El Salvador. September 5-10, 2016. CD, UNU-GTP SC-22.

Includes:

Gunnlaugsson, E. and Steingrímsson, B., 2016: Environmental planning and permit process for the Hellisheiði power plant in Iceland, 14 pp.

Axelsson, G., 2016: Nature and assessment of geothermal resources, 23 pp.

Axelsson, G., 2016: Sustainable management of geothermal resources, 23 pp.

Haraldsson, I.G., Wetangula, G., Omarsdottir, M., and Mangi, P., (Ed.), 2016: Papers and presentations at "SDG Short Course I on Exploration and Development of Geothermal Resources". Organized by UNU-GTP, KenGen and GDC, Lake Bogoria and Naivasha, Kenya, 10. – 30. Nov., 2016 CD, UNU-GTP SC-23.

Omarsdottir, M., Georgsson, L.S., and Haraldsson, I.G., (Ed.), 2016: Geothermal training in Iceland 2016, XXX pp, ISBN 978-9979-68-XXX-X.

Includes:

Abera Kebede, B., 2016: Geology, hydrothermal alteration and structures of well HE-59, Hellisheidi Geothermal Field, SW-Iceland. Report 8.

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- Keter, H.K., 2016: Methodology for optimizing pipeline route selection, separator and power plant placement in geothermal projects; Case of Olkaria IV in Kenya. Report 22.
- Kovács, A., 2016: Electromagnetic exploration of the Eyjafjörður low temperature geothermal area. Report 23.
- Leech, C.N., 2016: Modelling the geochemical effects of geothermal fluid injection in the Olkaria geothermal field, Kenya. Report 24.
- Lkhagvasuren, S., 2016: Resistivity surveying in geothermal exploration with an application to the Eyjafjörður low temperature area, N-Iceland. Report 25.
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- Medgyesy, A., 2016: Cogeneration of power and heat in Hungary. Report 27.
- Njoroge, D.W., 2016: Monitoring and evaluation framework for geothermal projects: Olkaria I Unit 6. Report 28.
- Nzayisenga, T., 2016: The basis for well design and drilling program for geothermal exploration in Kinigi, Rwanda. Report 29.
- Odongo, D.W., 2016: Optimised pipeline route design for connection of a make-up production well – Case study of well OW-906 for Olkaria IV power plant in Kenya. Report 30.
- Pásztor, D., 2016: Model review and sensitivity analysis of the Sárospatak reservoir model, NE-Hungary. Report 31.
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- Revilla Vargas, D.M., 2016: Analysis of bit operations - Laguna Colorada geothermal project. Report 36.
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Georgsson, L.S., Fridleifsson, I.B., Haraldsson, I.G., Omarsdottir, M., Gudjónsdóttir, M.S., and Ísberg, Th., 2015: UNU Geothermal Training Programme in Iceland - Capacity Building for Geothermal Energy Development for 36 Years. Proceedings World Geothermal Congress 2015, Melbourne, Australia, 11 pp.

Georgsson, L.S., Haraldsson, I.G., Omarsdottir, M., and Ísberg, Th., 2015: The UNU Geothermal Training Programme: Training Activities Offered On-Site In Developing Countries. Proceedings World Geothermal Congress 2015, Melbourne, Australia, 12 pp.

Gondwe, K., Allen, A., Georgsson, L.S., Chakhala, H. and Tsokonombwe, G., 2015: Geothermal Development in Malawi - A Country Update. Proceedings World Geothermal Congress 2015, Melbourne, Australia, 8 pp.

Ouko, E.A. and Omarsdottir, M., 2015: The Geothermal Journey - A Case Example of Iceland and Kenya. Proceedings World Geothermal Congress 2015, Melbourne, Australia, 8 pp.

Onyango, S.O., 2015: Design of steam gathering system for Menengai Geothermal Field, Kenya. University of Iceland, MSc thesis, UNU-GTP report 1, 60+8 pp, ISBN 978-9979-68-372-8.

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Musonye, X.S., 2015: Sub-surface petrochemistry, stratigraphy and hydrothermal alteration of the domes area, Olkaria geothermal field, Kenya. University of Iceland, MSc thesis, UNU-GTP report 3, 100+8 pp, ISBN 978-9979-68-374-2.

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Cideos Nuñez, O.F., 2015: Predictive techniques applied to geothermal power plants data. University of Iceland, MSc thesis, UNU-GTP report 5, 47+8 pp, ISBN 978-9979-68-376-6.

Thórhallsson, S., Bóasson, H.Á., and Haraldsson, I.G., 2015: Short course on well design and geothermal drilling technology for geothermal companies and institutions in Ethiopia. Organized by UNU-GTP and financed by the ICEIDA/NDF, Geothermal Exploration Project, held at Addis Ababa and Lake Ziway, Ethiopia, January 12-24, 2015. Prepared for: Icelandic International Development Agency (ICEIDA). Report UNU-GTP/CR-1501.

Georgsson, L.S., 2015: Training and support in Rwanda for the drilling of Wells kw-01 and kw-02 at Karisimbi - Final summary report. Prepared for: Icelandic International Development Agency (ICEIDA). Report UNU-GTP/CR-1502.

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Georgsson, L.S., and Haraldsson, I.G., 2015: Geothermal energy in the world and UNU-GTP capacity building activities, 15 pp.

Hersir, G.P., 2015: Resistivity surveying and electromagnetic methods, 14 pp.

Óskarsson, F., 2015: Exploration and development of a conceptual model for the Theistareykir geothermal field, NE-Iceland, 20 pp.

Omarsdottir, M., and Georgsson, L.S., (Ed.), 2015: Geothermal training in Iceland 2015, 836 pp, ISBN 978-9979-68-391-9.

Includes:

Ali Soumail, A., 2015: TEM and MT resistivity surveying: Data acquisition, processing and 1D inversion with an example from Hágöngur geothermal field, Mid-Iceland. Report 6.

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Cacho, B.T., 2015: A study on different two-phase flow correlations used in geothermal wellbore modelling. Report 8.

Ebrahimi, D., 2015: Structural mapping and subsurface geology compared to thermal gradient and the geothermal system in Mödruvellir, SW Iceland. Report 9.

Franco, F., 2015: Subsurface geology and hydrothermal alteration of Cachacos-Lombadas sector, Ribeira Grande Geothermal Field, São Miguel island, Azores. Report 10.

Girma, K., 2015: Assessment on project management maturity at Landsvirkjun – Power projects department division. Report 11.

Gondwe, K.T., 2015: Geothermal energy utilization model for Nkhotakota geothermal springs in Malawi. Report 12.

Gotuato, J.G., 2015: The thermodynamics behind initiation of flow from geothermal wells. Report 13.

Hailegiorgis Abebe, G., 2015: Processing and joint 1D inversion of MT and TEM data from Alallobeda geothermal field in Tendaho, NE-Ethiopia. Report 14.

Hassan Wais, H., 2015: Borehole geology and hydrothermal alteration of well HE-58, Hellisheidi geothermal field, SW-Iceland. Report 15.

- Kiara, F.N., 2015: The concentrations of selected trace elements and ions in spent geothermal liquid and associated impacts on ground water, soil and vegetation at the Menengai geothermal field. Report 16.
- Kiptanui, S.K., 2015: Financial assessment of commercial extraction of sulfur and carbon dioxide from geothermal gases in Menengai, Kenya. Report 17.
- Langat, R.K., 2015: Topping unit at Olkaria IV geothermal power plant, Naivasha, Kenya. Report 18.
- Makwaya, N., 2015: Interpretation of geochemical data from low-temperature geothermal area, Fljótin, N-Iceland, compared to selected geothermal samples from Rungwe, Tanzania. Report 19.
- Mangi, P.M., 2015: Project review of geothermal spas' construction in Kenya and Iceland. Report 20.
- Mismanos, J.W., 2015: Evaluation of structural permeability in Mahanagdong geothermal field, Philippines using soil gases ( $^{220}\text{Rn}$ ,  $^{222}\text{Rn}$ ,  $\text{CO}_2$  flux). Report 21.
- Monasterial, J.L.C., 2015: Microgravity survey in 2009-2010 around Bacman geothermal field, Philippines – gravity corrections and interpretations. Report 22.
- Muanza, P.K., 2015: Geothermal mapping in Middelur field, Hengill area, SW-Iceland. Report 23.
- Mundui, J.K.K., 2015: Amorphous silica and anhydrite scaling potential from MW01, Menengai, Kenya. Report 24.
- Mutua, F.M., 2015: Borehole geology and hydrothermal alteration mineralogy of well MW-19A, Menengai geothermal field, Kenya. Report 25.
- Mwangi-Gachau, E., 2015: Preliminary economic valuation of environmental impacts of Olkaria geothermal project. Report 26.
- Ngigi, A.N., 2015: Geothermal well design using the new 2015 New Zealand standard and 1991 standard - a case of well MW-20A in Menengai, Kenya. Report 27.
- Otmar, A.T., 2015: Temperature and pressure analysis of wells NJ-13 and NJ-28 in Nesjavellir geothermal system, SW-Iceland. Report 28.
- Ravazdezh, F., 2015: Study on operation and maintenance of flash steam power plants: Reykjanes power plant. Report 29.
- Vieira, N.F.M.M., 2015: Steam and brine gathering system design for Cachaços-Lombadas new production wells in Ribeira Grande geothermal field. Report 30.
- Wamalwa, R.N., 2015: Evaluation of factors controlling the concentration of non-condensable gases and their possible impact on the performance of wells in the Olkaria geothermal field. Report 31.
- Zheng Tingting, 2015: Assessment of the urban Dezhou sandstone geothermal reservoir in North China. Report 32.

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- Georgsson, L.S., 2014: Lifting E-Africa to a New Level in Geothermal Development – the UNU-GTP Capacity Building Activities for Africa. Proceedings of the 5th African Rift Geothermal Conference, ARGeo-C5, Arusha, Tanzania, 29-31 October 2014, 8 pp.
- Georgsson, L.S., 2014: Geothermal Utilization in the World with Examples from Africa and Iceland. Proceedings of the 5th African Rift Geothermal Conference, ARGeo-C5, Arusha, Tanzania, 29-31 October 2014, 8 pp.
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- Aráuz Torres, M.A., 2014: Modelling  $\text{H}_2\text{S}$  dispersion from San Jacinto-Tizate geothermal power plant, Nicaragua. University of Iceland, MSc thesis, UNU-GTP report 3, 54 pp, ISBN 978-9979-68-346-9.

Haraldsson, I.G., de Velis, E., Omarsdottir, M., Wilde, M.A.G., and de Henriquez, E. (Ed.) 2014: Papers presented at “Short Course VI on Utilization of Low- and Medium-Enthalpy Geothermal Resources and Financial Aspects of Utilization”, organized by UNU-GTP and LaGeo in Santa Tecla, El Salvador, March 23-29, 2014. CD, UNU-GTP SC-18, ISBN 978-9979-68-339-1.

Includes:

Haraldsson, I.G., 2014: Economic benefits of geothermal space heating from the perspective of Icelandic consumers, 14 pp.

Haraldsson, I.G., 2014: Government incentives and international support for geothermal project development, 12 pp.

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Miyora, T.O., 2014: Modelling and optimization of geothermal drilling parameters - A case study of well MW-17 in Menengai, Kenya. University of Iceland, MSc thesis, UNU-GTP report 6, 66 pp, ISBN 978-9979-68-344-5.

Mwarania, F.M., 2014: Reservoir evaluation and modelling of the Eburru geothermal system, Kenya. University of Iceland, MSc thesis, UNU-GTP report 2, 58 pp, ISBN 978-9979-68-345-2.

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Georgsson, L.S., 2014: Geophysical methods used in geothermal exploration, 16 pp.

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Georgsson, L.S., and Karlsdottir, R., 2014: Resistivity methods: DC and TEM with examples and comparison from the Reykjanes peninsula and Öxarfjörður, Iceland, 14 pp.

Omarsdottir, M., Haraldsson, I.G., and Georgsson, L.S., (Ed.), 2014: Geothermal training in Iceland 2014, 989 pp, ISBN 978-9979-68-342-1.

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Ambunya, M.N., 2014: Natural state model update of Olkaria Domes field. Report 7.

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Bawas, F., 2014: Borehole stratigraphy and alteration mineralogy of well HE-6, Hellisheidi, SW-Iceland. Report 9.

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Hosseinzadeh, A., 2014: Air quality impact assessment: H<sub>2</sub>S dispersion modelling for Sabalan geothermal power plant, NW-Iran. Report 15.

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Ntihabose, L., 2014: Well test analysis and temperature and pressure monitoring of Krafla and Nesjavellir high temperature geothermal fields in Iceland. Report 25.

Nzioka, F.K., 2014: Preliminary design of a hot water distribution system for greenhouse heating, Olkaria, Kenya. Report 26.

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Rangel, M.de G.V.de M., 2014: Temperature model and tracer test analysis for the Ribeira Grande geothermal field, São Miguel Island, Azores. Report 29.

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