Estimated Power Generation Costs for EGS

Jay NATHWANI, Greg MINES

Determining Injection-Induced Earthquake Magnitude and Ground Motion Exceedance Probability Using Paradox Valley, Colorado, Injection and Seismicity Data Including Parametric Sensitivities

Daniel O'CONNELL, Robert CREED

Improving Geothermal Project Economics with Multi-Zone Stimulation: Results from the Newberry Volcano EGS Demonstration

Susan PETTY, Yini NORDIN, William GLASSLEY, Trenton CLADOUHOS, Mike SWYER,
CGS – Controlled Wellbore-to-Wellbore Geothermal System Flow
Justin POGACNIK, Peter LEARY & Peter MALIN

Development of a Neutron Diffraction Based Experimental Capability for Investigating Hydraulic Fracturing for EGS-like Conditions
Yarom POLSKY, Ke AN, Luc DESSIEUX, Larry ANOVITZ, Philip BINGHAM, Justin CARMICHAEL

Application of Neutron Imaging to Investigate Flow Through Fractures for EGS
Yarom POLSKY, Ke AN, Larry ANOVITZ, Philip BINGHAM, Justin CARMICHAEL

Using CO2 from an IGCC Plant as a Heat Transfer Fluid for the Extraction of Geothermal Energy for Power Generation from EGS
Arun RAM MOHAN, UDAY Turaga, Vishakha SHEMBEKAR, SUBBARAMAN Viswanathan, Derek ELSWORTH, Sarma PISUPATI

Numerical Study of Hydro-shearing in Geothermal Reservoirs with a Pre-existing Discrete Fracture Network
Azadeh RIAHI, Branko DAMJANAC

Pre-stimulation Coupled THM Modeling Related to the Northwest Geysers EGS Demonstrations Project
Jonny RUTQVIST, Patrick F. DOBSON, Julio GARCIA, Curtis M. OLDBURG, Donald W. VASCO, Mark WALTERS, Craig HARTLINE

Experimental Investigation of Brine-CO2 Flow through a Natural Fracture: Permeability Increases with Concurrent Dissolution/Reprecipitation Reactions
Megan SMITH, Stuart WALSH, Walt MCNAB, Susan CARROLL

Massive Hydraulic Fracturing in Low Permeable Sedimentary Rock in the GeneSys Project
Torsten TISCHNER, Stefanie KRUG, Evelin PECHAN, Annalena HESSHAUS, Reiner JATHO, Monika BISCHOFF, Thomas WONIK

Possibility to Use CO2 as EGS Fluid in Hungary
Aniko N. TOTH, Elemer BOBOK

Using Geothermal Energy to Preheat Feedwater in a Traditional Steam Power Plant
Josephine VARNEY, Nigel BEAN

A Roadmap for Strategic Development of Enhanced Geothermal Systems Technologies
John ZIAGOS, Benjamin R. PHILLIPS, Lauren BOYD, Greg STILLMAN, Allan JELACIC, Eric HASS
Geochemistry

Volumetric Properties and Fluid Phase Equilibria of CO₂+H₂O
Ryan CAPOBIANCO, Miroslaw S. GRUSZKIEWICZ, David J. WESOLOWSKI, David R. COLE and Robert J. BODNAR

Effects of Volcanism, Crustal Thickness, and Large Scale Faulting on the He Isotope Signatures of Geothermal Systems in Chile
Patrick F. DOBSON, B. Mack KENNEDY, Martin REICH, Pablo SANCHEZ, and Diego MORATA

Oxygen Isotopic Evidence of Water-Rock Interactions in the Coso Geothermal System
Thomas ETZEL, John BOWMAN, Jesse MCCULLOCH, Joseph MOORE, Micheal SPICUZZA, John VALLEY

Microbial Impacts on Geothermometry Temperature Predictions
Yoshiko FUJITA, David W. REED, Kaitlyn R. NOWAK, Vicki S. THOMPSON, Travis L. MCLING, Robert W. SMITH and D. Craig COOPER

Comparison of Reservoir Conditions in High Noncondensible Gas Geothermal Systems
Jill Robinson HAIZLIP, Fusun TUT HAKLIDIR, and Sabodh K. GARG

Multicomponent Equilibrium Models for Testing Geothermometry Approaches
Carl D. PALMER, Robert W. SMITH, D. Craig COOPER

Experimental Study of Rock–Fluid Interactions using Automated Multi-Channel System operated under Conditions of CO₂-based Geothermal Systems
Miroslav PETRO, Jim ZESCH, Norine CHANG, Alan BELL, Ashutosh KOLE, Alexandra RODKIN, Patrick F. DOBSON, Yoojin JUNG, Tianfu XU

Impacts of Rock-brine Interactions on Sandstone Properties in Lower Miocene Sediments, Southwest Louisiana
Masoud SAFARI-ZANJANI, Christopher WHITE, Jeffrey S. HANOR

In Situ Material Studies at the High Temperature Skid (HTS) Bypass System of the Geothermal Power Plant in Soultz-sous-Forêts, France
Julia SCHEIBER, Guillaume RAVIER, Oriane SONTOT, Christina HENSCH, Albert GENTER

Fluid Mineral Equilibria in Geothermal Reservoirs from the Great Basin: Implications for Chemical Geothermometry
Stuart F. SIMMONS

Geothermometry and Shallow Circulation of a Low Enthalpy System: The Bath Geothermal Reservoir, Jamaica
DeBonne N. WISHART

The Chemical Properties of Yangyi High Temperature Geothermal Field in Tibet
ZHENG Xiuhua, DUAN Chenyang, LIU Haiyang
Geophysics

Thermal State of the Niger Delta Basin
Idara AKPABIO, Joe EJEDAW and Joseph EBENIRO

Thermal Conductivity Estimates in the Niger Delta using Lithologic Data and Geophysical Well Logs
Idara AKPABIO and Joe EJEDAW

Freeze-Thaw-Behaviour: Observations in grouted BHEs
Hauke ANBERGEN and Ingo SASS

Exploration Techniques for Locating Offshore Geothermal Resources Near Iceland
Darren ATKINS, Haraldur AUDUNSSON

Full Moment Tensor Analysis Using First Motion Data at The Geysers Geothermal Field
O. S. BOYD, D. S. DREGER, V. H. LAI, R. GRITTO

State of Stress in the Northwest Geysers Geothermal Field and Implications for Fault-Controlled Fluid Flow
Katie BOYLE, Mark ZOBACK

Directly Imaging Steep Fault Zones Using Multicomponent Seismic Data
Ting CHEN and Lianjie HUANG

Preliminary Investigation of Reservoir Dynamics Monitored through Combined Surface Deformations and Micro-Earthquake Activity: Brady's Geothermal Field, Nevada
Nicholas C. DAVATZES, Kurt L. FEIGL, Robert MELLORS, William FOXALL, Herb WANG, and Peter DRAKOS

Applications of Radar Interferometry to Detect Surface Deformation in Geothermal Areas of Imperial Valley in Southern California
Mariana ENEVA, David ADAMS, Giacomo FALORNI, Jessica MORGAN

Correlation of Geothermal Springs with Sub-Surface Fault Terminations Revealed by High-Resolution, UAV-acquired Magnetic Data
Jonathan M.G. GLEN, Anne E. EGGER, Corey IPPOLITO, Noah D. ATHENS

Three Dimensional Seismic Tomography at The Geysers Geothermal Field, CA, USA
Roland GRITTO, Seung Hoon, YOO, Steve P. JARPE

3D Inversion of Magnetotelluric (MT) Resistivity Data from Krýsuvik High Temperature Geothermal Area in SW Iceland
Gylfi Páll HERSIR, Knútur ÁRNASON and Arnar Márr VILHJÁLMSSON

Micro-seismicity within the Coso Geothermal Field, California, from 1996 to 2012
J. Ole KAVEN, Stephen H. HICKMAN, Nicholas C. DAVATZES
EGS Exploration Methodology Development Using the Dixie Valley Geothermal District as a Calibration Site. The Seismic Analysis Component  
Ilieana TIBULEAC, David VON SEGGERN, Joe IOVENITTI, Jon SAINSbury

An Initial Value of Information (VOI) Framework for Geophysical Data Applied to the Exploration of Geothermal Energy  
Whitney TRAINOR-GUITTON, Abelardo RAMIREZ, John ZIAGOS, Robert MELLORS, and Jeffery ROBERTS

The Role of MT in Geothermal Exploration at Newberry Volcano, Oregon  
Al WAIBEL, Les BEARD, Gary OPPLIGER

Intersecting Fault Trends and Crustal-Scale Fluid Pathways Below the Dixie Valley Geothermal Area, Nevada, Inferred from 3D Magnetotelluric Surveying  
Philip WANNAMAKER, Virginie MARIS, Jon SAINSbury, Joe IOVENITTI

Interpretation of MT and SP Survey Results at Minami-Izu Geothermal Field, Japan  
Kasumi YASUKAWA, Tsuneo ISHIDO, Osamu MATSUBAYASHI, Toshihiro UCHIDA, Keiichi SAKAGUCHI and Kazuo MATSUYAMA
Geology

Siliceous Sinter: An Early Exploration Tool and Direct Link to a Geothermal Reservoir
Bridget Y. LYNNE

Geologic Model of the Geothermal Anomaly at Pilgrim Hot Springs, Seward Peninsula, Alaska
Joshua K. MILLER, Anupma PRAKASH, Ronald DAANEN, Christian HASELWIMMER, Michael WHALEN, William CUMMING, Dick BENOIT, Arthur C. CLARK, Markus MAGER, Gwen HOLDMANN

Fault Exploration based on the Microcrack Distribution Pattern: the Example of the Tsukiyoshi Fault, Central Japan
Tomoyuki OHTANI, Kazunari OKAZAKI, Yuki NISHIMURA, Satoru KOJIMA, Koji KUBOSHIMA, Eiji SASAO, Tadahiko TSURUTA

Integrated 3D Modeling of Structural Controls and Permeability Distribution in the Patua Geothermal Field, Hazen, NV
Neil PETERSON, Jim COMBS, Leif BJELM, Sabodh GARG, Benjamin KOHL, Colin GORANSON, Robert MERRILL, Peter VAN DE KAMP, Amie LAMB

Characterization of Geothermal Reservoir Units in Northwestern Alberta by 3D Structural Geological Modelling and Rock Property Mapping
Simon N. WEIDES, Inga S. MOECK, Doug R. SCHMITT, Jacek A. MAJOROWICZ, Elahe P. ARDAKANI
Direct Use

A Design, Economic and Greenhouse Gas Assessment of Space Heating and Cooling Using an Absorption Heat Pump Integrating Solar, Geothermal, and Natural Gas Sources
Arian AGHAJANZADEH, Franklin G. HOROWITZ

Overview of Extraction of Mineral/Metals with the Help of Geothermal Fluid
Piyush BAKANE

Numerical Modeling of Slinky-coil Horizontal Ground Heat Exchangers with Snow-covered Ground Surface
Hikari FUJII, Shohei YAMASAKI

Supply Characterization of the Direct Use Potential in the U.S.
Xiaoning HE and Brian ANDERSON

Maciej Z. LUKAWSKI, Konstantinos VILAETIS, Lizeta GKOGLKA, Koenraad F. BECKERS, Brian J. ANDERSON, Jefferson W. TESTER

Field Test of Ungrouted Ground Heat Exchangers with In-Hole Vertical Ground Water Flow
Takahiro MAEHARA, Hikari FUJII, Seiichiro IOKA, Atsushi WATABE

Direct Use Of Geothermal Energy For Drying Agricultural Products and Making Palm Sugar Crystal
H. Jacoba ROEROE, Noldy TERAH
Low Temperature

Gloria Andrea AGUIRRE, Jery R. STEDINGER, and Jefferson W. TESTER

Compact Ground Source Heat Exchangers and Solar Ground Re-charge, a Case Study
Davide MARITAN, Alessandro TREVISAN

Developments in Thermal Pile and Thermal Tunnel Linings for City Scale GSHP systems
NICHOLSON Duncan, CHEN Alex, PILLAI Anton, CHENDORAIN Michael

Three Heating Seasons Monitoring of Usage of Low Enthalpy Geothermal Resources: Exergetic Performance Analysis of an EAHE Assisted Agricultural Building
Onder OZGENER, Leyla OZGENER, Jefferson W. TESTER

Design Parameter Acquisition of an Underground Heat Storage and Extraction System – a Deep BHE Array in a Karstic Alpine Marble Aquifer for 1 GWh Power
Ingo SASS and Clemens LEHR
General

Characterizing the Power Potential of Hot Stratigraphic Reservoirs in the Great Basin, U.S.  
Rick ALLIS, Joseph N. MOORE, Stefan KIRBY, Tom ANDERSON, Thomas SPENCER

The Current Status of Geothermal Projects in Australia – A National Review  
Betina BENDALL, Barry GOLDSTEIN and Mieka WEBB

Economic Comparison between a Well-head Geothermal Power Plant and a Traditional Geothermal Power Plant  
Carlos Atli CORDOVA GEIRDAL, Maria Sigridur GUDJONSDOTTIR, Pall JENSSON

Analysis of Data Gaps in Geothermal Exploration in the Western United States  
Ariel ESPOSITO, Dan GETMAN, Kate YOUNG, Hidda THORSTEINSSON, and Arlene ANDERSON

West Java Geothermal Update  
Achmad FADILLAH, Tubagus NUGRAHA and Jemmi GUMILAR

New Geothermal Resource Delineated Beneath Black Rock Desert, Utah  
Mark GWYNN, Bob BLACKETT, Rick ALLIS, Christian HARDWICK

Fluid-Flow Zones in a Geothermal Sandstone Reservoir: Localization From Thermal Conductivity and Temperature Logs, Borehole EPS1 (Soultz-sous-Forêts, France)  
Sébastien HAFFEN, Yves GERAUD, Marc DIRAISON, Chrystel DEZAYES

Geothermal Energy: The Energy-Water Nexus  
Christopher HARTO, Jenna SCHROEDER, Lou MARTINO, Robert HORNER, and Corrie CLARK

Development of a Cooling-System for Research Probes for Geothermal Boreholes  
Benedict HOLBEIN

Development of a Research Probe for Geothermal Boreholes  
Benedict HOLBEIN, Joerg ISELE

Development of Metric for Measuring the Impact of RD&D Funding on GTO’s Geothermal Exploration Goals  
Scott JENNE, Katherine YOUNG, Hildigunnur THORSTEINSSON

Utilization of Offshore Geothermal Resources for Power Generation  
Baldur KARASON, Maria GUDJONSDOTTIR, Pall VALDIMARSSON, Geir THOROLFSSON

Rift Zones as a Case Study for Advancing Geothermal Occurrence Models  
Daniel KING, Elisabet METCALFE

An Enterprise Development Look at Geothermal Resources in KERZ
Comparison of Geothermal with Solar and Wind Power Generation Systems
Kewen Li

Sustainable Development of Geothermal Resources: an Economic Alternative
Sam MALAFEH, Basil SHARP

Hydrogeothermal Convective Systems of Ilidža Area near Sarajevo, Bosnia and Herzegovina
Neven MIOSIC, Natalija SAMARDZIC and Hazim HRVATOVIC

Challenges in Developing Katwe Geothermal Power Project in Western Uganda
Ralph K.B. NYAKABWA-ATWOKI

Nugroho Agung PAMBUDI, Ryuichi ITOI, Saeid JALILINASRABADY, KHASANI

A Roadmap for Strategic Development of Geothermal Exploration Technologies
Benjamin R. PHILLIPS, John ZIAGOS, Hildigunnur THORSTEINSSON, Eric HASS

Top Squeeze or Top Fill: Improved Secondary Cementing for Geothermal Wells
William M. RICKARD, Jonathan HERNANDEZ and Alan BAILEY

Multiple License Holders in the Same Area: An Expected Risk to Geothermal Development in Turkey
Omer Inanc TUREYEN, Abdurrahman SATMAN

Assessment of Geothermal Resources in China
Guiling WANG, Wenjing LIN, Zhiming LIU, Wei ZHANG, Feng MA, Wanli WANG, and Kewen LI
Emerging Technology

Utilization of Supplementary Cementitious Materials in Geothermal Well Cementing
Baris ALP and Serhat AKIN

Design of CO2-Based Geothermal Power Plant for Transient Reservoir Dry-out – or ‘Enhanced Water Recovery’
Aleks ATRENS, Hal GURGECI

Kinetics of the Gelation of Colloidal Silica at Geothermal Conditions, and Implications for Reservoir Modification and Management
Jonathan HUNT, Souheil EZZEDINE, William BOURCIE, Sarah ROBERTS

Direct Power Generation from Heat without Mechanical Work
Kewen LI, Changwei LIU, Pingyun CHEN

A High Performance Fiber Optic Seismic Sensor System
Björn N.P. PAULSSON, Julio L. TOKO, Jon A. THORNBURG, Frank SLOPKO, Ruiqing HE, Chang-hua ZHANG

Impact of Having a Majorly Geothermal Powered Economy: A Critique of Kenyan Power System
Joel SUTTER, Peter OBIMO