

	TRACK 1	TRACK 2	TRACK 3
	GEOHERMAL ASSOCIATED WITH OIL & GAS OPERATIONS Session Chair: Dan Wendt	BUSINESS DEVELOPMENT / FINANCE / MARKET ANALYSIS Chair: Roy Mink	GEOPHYSICS 1 Chair: Dennise Templeton
1:30	<i>Technical Considerations of Well Design and Equipment Selection for High Temperature Applications - A Canadian Perspective</i> (Brandon Curkan et al.)	<i>The GeoFutures Facility: A Proposed Geothermal Risk Mitigation Instrument for East Africa</i> (Ann Robertson-Tait et al.)	<i>Magnetotellurics Static Shift Correction Using Transient Electromagnetics Data from Suswa Geothermal Prospect in Kenya</i> (Raymond Mwakirani et al.)*
1:50	<i>Downhole Geothermal Power Generation in Oil and Gas Wells</i> (Kai Wang et al.)*	<i>Comparative Costs of Geothermal, Solar, and Wind Generation Based on California Independent System Operator Electricity Market Data</i> (Ian Warren)	<i>Constrained inversion of magnetotelluric and gravity data applied to deep geothermal exploration in the Sioule valley, Massif-Central, France.</i> (Ars Jean-Michel et al.)
2:10	<i>The UND CLR Binary Geothermal Power Plant</i> (Will Gosnold et al.)*	<i>Subsidies in Kenya's Geothermal Sub-Sector</i> (Shammah Kiptanui et al.)	<i>Improving MT resistivity model resolution with gravity joint inversion: application to geothermal exploration</i> (Pascal Tarits et al.)*
2:30	<i>Concept for a Distributed Baseload Binary Power Network</i> (Will Gosnold et al.)*	<i>Geothermal Costs of Capital: Relating Market Valuation to Project Risk and Technology</i> (Anna Wall et al.)	<i>Assessment of the Possible Uses of Gravity Measurements and Forward Modeling for the Geothermal Projects of Geneva (Switzerland)</i> (Pierrick Altwegg et al.)
2:50	<i>Assessment of Potential Economic Benefits of Silica in Geothermal Brine at Menengai, Kenya</i> (Diana Waringa et al.)	<i>Positioning and Promoting – The Role of Marketing and Communication in the Geothermal Sector</i> (Patrick Hanson et al.)	<i>Preliminary investigation of seismic velocity variation at the Rotokawa and Ngatamariki Geothermal Fields</i> (Steven Sewell et al.)
3:10	3:10 – 3:40 Break		
	OVERCOMING BARRIERS Session Chair: Kate Young	GEOLOGY 1 Chair: Drew Siler	GEOPHYSICS 2 Chair: Mary Mann
3:40	<i>Barriers to Geothermal Development in Canada: Why We Produce OMW</i> (Alison Thompson et al.)	<i>Potential Candidates of Supercritical Geothermal Reservoir</i> (Noriyoshi Tsuchiya)	<i>Evolution of Microseismicity at the Blue Mountain Geothermal Site</i> (Dennise Templeton et al.)*
4:00	<i>Addressing Barriers to Geothermal Development in Drafting a Geothermal Law and Regulatory Framework for Ethiopia</i> (Kathleen Callison)	<i>Dynamic open-system volatile evolution of a shallow magmatic system, China Hat, SE Idaho: Implications for magmatic associated blind geothermal systems</i> (Ryan Goldsby et al.)	<i>Characterizing Narrows Zone at the Raft River EGS Site Using 2010 VSP Data and Microseismic Data</i> (David Li et al.)
4:20	<i>Crossing the Barriers: An Analysis of Land Access Barriers to Geothermal Development and Potential Improvement Scenarios</i> (Aaron Levine et al.)*	<i>Preliminary Description of Rocks and Alteration in IDDP 2 Drill Core Samples Recovered from the Reykjanes Geothermal System, Iceland</i> (Robert Zierenberg et al.)	<i>Using Virtual Earthquakes to Characterize the Seismic Properties of the Brady Geothermal Field</i> (Eric Matzel et al.)*
4:40	<i>Crossing the Barriers: An Analysis of Permitting Barriers to Geothermal Development and Potential Improvement Scenarios</i> (Aaron Levine et al.)*	<i>Origin and evolution of vein minerals cutting the biotite hornfels in the high-temperature geothermal reservoir of the Northwest Geysers, California.</i> (Clay Jones et al.)	<i>Ground-Roll Noise Suppression in Land Surface Seismic Data Using a Wavenumber-Adaptive Bandpass Filter</i> (Yunsong Huang et al.)*
5:00	<i>Crossing the Barriers: An Analysis of Market Barriers to Geothermal Development and Potential Improvement Scenarios</i> (Kate Young et al.)*	<i>Constraining palaeothermal history of geothermal systems through integrated fluid inclusion studies. A review with examples from Olkaria geothermal field, Kenya.</i> (Victor Otieno)	<i>Fracture and Stress Evaluation Using Well Logs and Microseismicity, in the Exploitation of Los Humeros Geothermal Field, Mexico</i> (Edgar Urban Rascon et al.)*

	TRACK 4	TRACK 5	TRACK 6	TRACK 7
	POWER OPERATIONS/FLEXIBLE GENERATION/MAINTENANCE I Chair: Bill Harvey	ENHANCED GEOTHERMAL SYSTEMS: COLLAB. Chair: Tim Kneafsey	INTERNATIONAL I Chair: Gene Suemnicht	GEA/GRC Panel Chair: Rhonda Mills
1:30	<i>Steam Turbine Rotor Life Management</i> (Stephen Rowbotham et al.)	<i>An Introduction to the EGS Collab Project</i> (Pat Dobson et al.)	<i>Austral/Asia Region – Innovation Downunder</i> (Andrea Blair - GNS)	Western States Legislation
1:50	<i>KWG 4 Unit 1 Optimization Through Steam Path Refurbishment</i> (Christopher Kutswa)	<i>Fracture Designs for the Collab/ SIGMA-V Project</i> (Hunter Knox et al.)*	<i>Indonesia Region – Expanding opportunities</i> (Abadi Poernomo - INAGA)	
2:10	<i>Maintenance of Olkaria 1 Additional Units (AU) Power Plant, Kenya</i> (George Ngomi)*	<i>The Role of Numerical Simulation in the Design of Stimulation and Circulation Experiments for the EGS Collab Project</i> (Mark White et al.)	<i>Philippine Region – Continuing Generation</i> (Paul Cerrulo - EDC)	
2:30	<i>Design of Wairakei B Station GRS Upgrade</i> (Tracy Mills)	<i>Numerical Modeling of Seismic and Displacement-Based Monitoring for the EGS Collab Project</i> (Lianjie Huang et al.)	<i>Japan – Renewed Emphasis</i> (Hiroshii Asanuma, Director, Advanced Industrial Science and Technology (AIST))	
2:50	<i>Implementation of Wairakei B Station GRS Upgrade</i> (Tracy Mills et al.)*	<i>Earth Modeling for EGS Collab</i> (Ghanashyam Neupane et al.)	<i>China- Renewable Future</i> (Pang Zhonghe)	
3:10	3:10 – 3:40 Break			
	HEATFLOW & CLIMATE CHANGE Chair: Maria Richards	ENHANCED GEOTHERMAL SYSTEMS I Chair: Earl Mattson	INTERNATIONAL II	GEA/GRC Panel Chair: Rhonda Mills
3:40	<i>Borehole Temperatures, Meteorologic Data, and Baseline Temperatures for Recent Climate Change: from Local to Global Scales</i> (David Chapman et al.)	<i>Tracer Testing to Characterize Hydraulic Stimulation Experiments at the Raft River EGS Demonstration Site</i> (Pete Rose et al.)	<i>Central America Region – Added Generation and Future Plans</i> (Gustavo Cuellar Jr. – CASYS SA.)	Western States Legislation
4:00	<i>Montana Temperature Logs Changing Values</i> (Maria Richards et al.)	<i>Hydraulic Fracturing in Granite at Subcritical/Brittle to Supercritical/ Ductile Conditions</i> (Noriaki Watanabe et al.)	<i>South America Region – Investing in Opportunity</i> (Warren Dewhurst)	
4:20	<i>The Geothermal Climate Change Observatory at Emigrant Pass, Utah</i> (Michael Davis et al.)	<i>Pressure Solution and Permeability Evolution in Fractured Granite at Elastic and Plastic Deformation Regimes</i> (Kohei Saito et al.)	<i>East Africa Region – Expanding Capacity</i> (Andrew Palmateer - USEA)	
4:40	<i>Modelling of Temperature Profiles for Periodic Surface Air Temperatures</i> (Ramana D V et al.)	<i>Small Geothermal Power Generation System for Well Head</i> (Kazuhiro Wada et al.)	<i>Mid East Region – Expanding generation</i> (Tevfik Kaya, GeothermEx/Schlumberger)	
5:00	<i>Heat Flow and Climate Change</i> (Will Gosnold et al.)*	<i>Study on the Inhibition of Pipeline Scaling of Hot Spring in Tibet</i> (Wenxi Zhu Zhu et al.)		

*Paper is also a poster presentation.

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	TRACK 1	TRACK 2	TRACK 3
	EXPLORATION: WORLD TOUR Chair: Sean Porse	DIRECT USE Chair: Arlene Anderson	GEOCHEMISTRY 1 Chair Travis McLing
8:00	<i>Assessment of Yuntdağı Hydrothermal System in Dikili-İzmir Region, Western Turkey</i> (Aysegul Turan)	<i>The Nation's Oldest and Largest Geothermal Heating System</i> (Roy Mink)	<i>Study of Hydrothermal alteration, well measurement data, Thermal fluids geothermometry to develop a conceptual model of Sabalan geothermal field, NW Iran.</i> (Elaha Zarei et al.)*
8:20	<i>Onshore and Offshore Geothermal Energy Resource Potential of Portugal – A Case Study</i> (Lakshman Ravi Teja Pedamallu et al.)	<i>LCOH Estimated from Existing District Heating Systems in the U.S.</i> (Earl Mattson et al.)	<i>Geochemical Evaluation Of Groundwater Flow Processes And Mixing In Menengai Geothermal Field, Kenya</i> (George Mulusa et al.)
8:40	<i>Geothermal Potential of Northern Québec: A Regional Assessment</i> (Felix-Antoine Comeau et al.)	<i>A Preliminary Evaluation of Geothermal and Natural Gas Resource Options for Camp Dawson, Preston County, West Virginia</i> (Ken Means et al.)	<i>Hydrochemistry of the hot spring fluids of Villarrica geothermal system in the Andes of Southern Chile</i> (Sebastian Held et al.)*
9:00	<i>Karkar, Armenia – Slimhole Drilling and Testing Results</i> (Maxwell Wilmarth et al.)	<i>The Viability of Supplying an Industrial Park with Thermal Energy from Menengai Geothermal Field</i> (Jack Kiruja)	<i>Carbonates and Silica Scaling Model Applied to Hot Water Pipes for Sanitary Use at Hotel Río Perlas, Costa Rica</i> (Olman Arias-Molina et al.)
9:20	<i>Insights Into the Apas Kiri Geothermal System from AK-1D – Malaysia's First Geothermal Exploration Well</i> (Ryan Libbey et al.)	<i>Geothermal Desalination GeoVision Case Study Analysis: Multiple Effect Distillation</i> (Dan Wendt)	<i>Comparison and Controls of Thermal Spring Chemistry in Cascade Range and Olympic Mountains Geothermal Provinces, Washington</i> (Jon Golla et al.)*
9:40	9:40 – 10:10 Break		
	EDUCATION & COMMUNITY ENGAGEMENT 1 Chair: Jon Weers	MODELING & SIMULATION: HEAT PUMPS & DIRECT USE Chair: Kewen Li	DRILLING 1 Chair:
10:10	<i>The Geothermal Data Repository: Five Years of Open Geothermal Data, Benefits to the Community</i> (Jon Weers et al.)	<i>Optimization Design of Operation Scheme of Ground Source Heat Pump System Coupled with Energy Storage Device</i> (Yu Ren et al.)	<i>Durability of Bond between High-Temperature Cement Composites and Carbon Steel</i> (Tatiana Pyatina et al.)
10:30	<i>Geothermal energy: the pool of jobs!!</i> (Lynn Manijean et al.)	<i>Smith Predictive PID Control In Vapor Temperature Control Of Ground Source Heat Pump System</i> (Yun Zerong et al.)	<i>Influence of Organic Foaming Agents and PLA Fibers on Properties and Self-degradation of Alkali-activated Cement</i> (Huijing Tan et al.)*
10:50	<i>Adaptation of Social License Measurement and Analysis Techniques for Geothermal Usage and Development</i> (Kyle Bahr et al.)	<i>Cold Climate Slinky Ground Source Heat Pump</i> (Patrick Belzile et al.)	<i>Geothermal well design using the new 2015 New Zealand Standard and 1991 Standard: A case of MW-20A in Menengai, Nakuru County, Kenya</i> (Anthony Ngigi et al.)
11:10	<i>New Role of Geothermal Exploration</i> (Masami Nakagawa et al.)	<i>Optimal Configuration for Low-T Geothermal CHP Plants</i> (Sarah Van Erdevoghe et al.)*	<i>Evaluation of Self-degradability of Sodium Carboxymethyl Cellulose (CMC) in Alkali-activated Cementitious Materials for Geothermal Wells</i> (Limenglu Ma et al.)
11:30	<i>2016 Geothermal Student Competition</i> (Phyllis King et al.)		<i>The Drilling of RN-15/IDDP-2 Research Well at Reykjanes in SW Iceland.</i> (Ari Stefansson et al.)

	TRACK 4	TRACK 5	TRACK 6
	EMERGING TECHNOLOGIES 1 Chair: Will Osborn	RESERVOIR ENGINEERING/RESERVOIR MANAGEMENT/MODELING 1 Chair: Bridget Ayling	GEA/GRC Panel Chair: Rhonda Mills
8:00	<i>Redefining Hot Dry Rock and Closed Loop: Standing on the Shoulders of Giants – New Directions in Geothermal</i> (Walter Kolbe et al.)	<i>Large Volume Geothermal Injection in Nevada</i> (Dick Benoit)	Permit Steamlining
8:20	<i>High-Density Polyethylene (HDPE) As A Replacement Material For Carbon Steel Pipes In Geothermal Projects</i> (George Maingi)	<i>Estimation of Fracture Surface Area based on Tracer and Temperature Histories</i> (Anna Suzuki)	
8:40	<i>Enhanced Efficiency of Thermoelectric Generator by Optimizing Mechanical and Electrical Structures</i> (Kewen Li et al.)	<i>Analysis of Geothermal Reservoir and Well Operational Conditions using Monthly Production Reports from Nevada and California</i> (Diana Snyder et al.)	
9:00	<i>Geomechanics-Based Stochastic Analysis of Microseismicity for Analysis of Fractured Reservoir Stimulation with Application to Newberry EGS</i> (Jianrong Lu et al.)	<i>Well Field Optimization and Expansion Guided by Tracer Testing and Numerical Reservoir Modeling, Ribeira Grande Geothermal Field, Açores, Portugal</i> (Graça Rangel et al.)	
9:20	<i>3G Security Camera Network Using a Thermoelectric Generator Powered by a Geothermal Steam Pipe in Iceland</i> (Michael Petralia et al.)	<i>Key Technologies On Geothermal Water Reinjection Of Sandstone Porous Aquifers: A Case Study Of Dezhou Geothermal Reservoir In Northern China</i> (Tingting Zheng et al.)	
9:40	9:40 – 10:10 Break		
	PLAY FAIRWAYS 1 Chair: Eric Hass	FIELD OPERATIONS/PRODUCTION TECHNOLOGIES Chair:	GEA/GRC Panel Chair: Rhonda Mills
10:10	<i>Geothermal Play Fairway Analysis of the Snake River Plain: Phase 2</i> (John Shervais et al.)*	<i>Retrievable Inflatable Packer for Wellhead Inspection and Maintenance</i> (Barry Woodrow et al.)*	Secondary and Direct Uses for Geothermal
10:30	<i>Phase 2: Updated Geothermal Play Fairway Analysis of the Tularosa Basin, New Mexico</i> (Adam Brandt et al.)	<i>Feasibility Study of Using Pumped Production for Power Generation: A Case Study of MW-17</i> (Hilary Mwawasi)*	
10:50	<i>Geothermal Play-Fairway Analysis Of Washington State Prospects: Phase 2</i> (Corina Forson et al.)	<i>Success Story Handling The Blowout Of Three Wells In Geothermal Field With Capping Method</i> (Fakhri Andika et al.)	
11:10	<i>Phase II of Play Fairway Analysis for the Eastern Great Basin Extensional Regime, Utah: Status of Indications</i> (Philip Wannamaker et al.)	<i>Analytical and Experimental Study of Measuring Enthalpy in Geothermal Reservoirs with a Downhole Tool</i> (Xuhua Gao et al.)	
11:30	<i>High-enthalpy non-magmatic linear geothermal trends in the Basin and Range of Nevada, U.S.A.</i> (Al Waibel)		

*Paper is also a poster presentation.

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	TRACK 1	TRACK 2	TRACK 3
	EXPLORATION: ICELAND & AFRICA Chair: Chad Deering	COUNTRY UPDATES Chair: Jim Lovekin	DRILLING 2 Chair: Bill Rickard
1:10	<i>Successful Drilling for Supercritical Geothermal Resources at Reykjanes in SW Iceland</i> (Gudmundur Fridleifsson et al.)	<i>The Geothermal Database and Atlas of Hungary</i> (Aniko Toth et al.)	<i>Case Study of Geothermal Directional Drilling: The Menengai Geothermal Field</i> (Marietta Mutonga et al.)
1:30	<i>Temperature Prediction by Multigeophysical Inversion: Application to the IDDP-2 Well at Reykjanes, Iceland</i> (Ketil Hokstad, et al.)	<i>Geothermal developments in Pico Alto, Terceira Island, Azores</i> (António Franco et al.)	<i>Sensitivity analysis of geothermal drilling parameters-a case study of well MW-17 in Menengai Kenya</i> (Thomas Miyora)
1:50	<i>Suswa Volcano - Exploring for its Geothermal Potential</i> (Sylvia Malimo et al.)	<i>Private Geothermal Opportunities in Mexico</i> (Gerardo Hiriart)	<i>Advanced Percussive Drilling Technology for Geothermal Exploration and Development DE-FOA-EE0005502</i> (Jiann Su et al.)*
2:10	<i>Geothermal Conceptual Model of Suswa Volcano, Kenya</i> (Jeremiah Kipngok et al.)	<i>Turkish Geothermal – Perspectives on Development, Construction, and Operations</i> (William Harvey et al.)	<i>A New Approach to Mitigate Casing failures in High-Temperature Geothermal Wells</i> (Ingolfur Thorbjornsson et al.)
2:30	<i>Geothermal characterization of Paka volcano in Kenya from resistivity and gravity</i> (Charles Muturia)	<i>Geothermal Contribution In Rural Development</i> (Pharis Mukeu et al.)	<i>Hole Collapse Experience During Cleaning Flow in Wildcat Well in Denizli Field, Turkey</i> (Muhammed Bitlis et al.)
2:50	<i>2:50-3:20 Break</i>		
	EXPLORATION: MENENGAI Chair:	REGULATORY/ENVIRONMENTAL COMPLIANCE/POLICY ISSUES Chair:	DRILLING 3 Chair: Zhongwei Huang
3:20	<i>Menengai Caldera Geothermal Field - Eastern Upflow</i> (Lucy Njue et al.)	<i>The Increasing Value of Geothermal - New Finding and Research Needs</i> (Paul Thomsen et al.)	<i>A Model of Heat Transfer in Geothermal Wells with Lost Circulation</i> (Alfonso Garcia-Gutierrez et al.)
3:40	<i>Heat Source Mapping Using Gravity and Resistivity Measurements in Menengai Geothermal Field, Nakuru, Kenya</i> (Robert Mukiri et al.)	<i>Geothermal Induced Seismicity National Environmental Policy Act Review</i> (Aaron Levine et al.)	<i>Numerical Simulation of Wellbore Temperature for Multi-Geothermal Gradients in Guide ZR1 Geothermal Well, Qinghai, China</i> (Duan Chenyang et al.)
4:00	<i>Gravity in Mapping Geothermal Structures: Case Study of Menengai Geothermal Field, Kenya.</i> (Yussuf Mohamud et al.)	<i>Characterization of Borehole water quality from a volcanic area for drinking, case of the Menengai Geothermal project boreholes in Kenya.</i> (Henry Wamalwa)	<i>Numerical Analysis of the Two-material Downhole Flow Field in Hydrothermal Jet Drilling</i> (Zehao Lyu et al.)
4:20	<i>The Use of Leapfrog Software in Geothermal Conceptual Modelling: Case Study of Menengai Geothermal Field</i> (Geoffrey Mibei et al.)	<i>The Effect of Spent Geothermal Liquid on Ground Water Quality at the Menengai Geothermal Field, Kenya</i> (Fridah Nkatha et al.)	<i>Numerical Study of the Impact Flow Field of Multi-orifice Nozzle Compressible Hydrothermal Jet with Cooling Water</i> (Xianzhi Song et al.)
4:40	<i>Microgravity Survey of Paka Geothermal Prospect</i> (Levi Shako et al.)*	<i>The Bureau of Land Management 2017 Update</i> (Steve Storo)	<i>Step-Rate Formation Integrity Test Method for Geothermal Wells</i> (William Rickard et al.)

*Paper is also a poster presentation.

5:00 – 7:00 Poster Session

Please download the GRC Event App for the most up to date program.

	TRACK 4	TRACK 5	TRACK 6
	EMERGING TECHNOLOGIES 2 Chair:	FORGE 1: FALLON Chair: Lauren Boyd / Doug Blankenship	GEA/GRC Panel Chair: Rhonda Mills
1:10	<i>Lithium Extraction from Low Temperature Geothermal Brines with Integrated Thermoelectric Generation (Ken Jeffers et al.)</i>	<i>An Update on the Geologic Model of the Fallon FORGE site (Drew Siler et al.)*</i>	<i>Innovations in Hybrid and Flexible Geothermal</i>
1:30	<i>Beyond 300°C: Reliable Long-Term Measurement of Temperature for Supercritical Geothermal Systems (William Jacobsen et al.)</i>	<i>Fallon Forge: Analog Geologic Studies, Reanalysis Of 2D Seismic Profiles, And New Potential Fields Geophysics Studies (Nick Hinz et al.)</i>	
1:50	<i>Review of Exploitable Supercritical Geothermal Resources to 5 km at Geysers-Clear Lake, Salton Sea, and Coso (James Stimac et al.)</i>	<i>Seismicity near the Fallon FORGE Site and Development of an Induced Seismicity Mitigation Plan (Ernie Majer et al.)</i>	
2:10	<i>Development of Hybrid Geothermal Power Plants in Japan (Yoshinobu Nakao)</i>	<i>Reservoir Simulations for Optimized EGS Design at the Fallon FORGE (William Pettitt et al.)</i>	
2:30	<i>Retrofitting a geothermal plant with solar and storage to increase power generation (Joshua McTigue et al.)</i>		
2:50	<i>2:50-3:20 Break</i>		
	POWER OPERATIONS/FLEXIBLE GENERATION/MAINTENANCE 2 Chair: Karl Urbank	FORGE 2: MILFORD Chair: Lauren Boyd / Joe Moore	GEA/GRC Panel Chair: Rhonda Mills
3:20	<i>Takigami Binary Power Plant - The Largest Geothermal ORC Plant in Japan (Shigeto Yamada et al.)</i>	<i>Overview of the Utah FORGE Project (Joe Moore et al.)</i>	<i>Risk Reduction Strategies</i>
3:40	<i>Sulfur Deposition in Geothermal Power Plant Cooling Systems: A Unique Form of Inorganic Fouling Having a Direct Impact on Power Generation (Howard Rosser et al.)</i>	<i>Revised geologic mapping and fracture analysis of bedrock adjoining the Utah FORGE site (Stefan Kirby et al.)</i>	
4:00	<i>Geothermal Turbine Control System Retrofit Case Study (Jeff Schleis)</i>	<i>Preliminary Testing and Evaluation of the Utah FORGE Reservoir: Results from Well MU-ESW-1 (Mary Mann et al.)</i>	
4:20	<i>Case Study: Shell Side Geothermal Power Plant Condenser Cleaning Utilizing Hydrogen Peroxide (H2O2) at The Geysers. (Brian Benn et al.)*</i>	<i>Local Seismic Monitoring at the Milford, Utah FORGE Site (Kristine Pankow et al.)</i>	
4:40		<i>Earth Modeling for the Milford Utah FORGE Site (Michael Janis et al.)</i>	

*Paper is also a poster presentation.

5:00 – 7:00 Poster Session

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Chair: Patrick Hanson

DIRECT USE / HEAT PUMPS

Desalination of Impaired Water Using Geothermal Energy (Craig Turchi et al.)

Experimental Study of Particle Deposition With Temperature Gradient at the Fluid/Porous Media Interfaces (Mowen Li et al.)

Experimental Study on Pressure Loss Calculation for Slinky-Coil Heat Exchangers (Hiroyuki Kosukegawa et al.)

Review on evaluation methods for aquifer thermal energy storage systems (Xin Jiang et al.)

DOE FORGE

A 2D HYDROTHERM Model of the Utah FORGE Site (Shashank Tiwari et al.)

An Update on the Geologic Model of the Fallon FORGE site (Drew Siler et al.)*

Assessment of Quaternary Faulting near the Utah FORGE Site from Airborne Light Detection and Ranging (lidar) Data (Emily Kleber et al.)

Geophysical Signatures of the Milford, Utah FORGE site (Christian Hardwick et al.)

Testing Conceptual Models Using Native State Hydrothermal Modeling: Roosevelt Hot Springs, Utah (Rob Podgorney et al.)

Update on the Geochemistry and Geohydrology of the FORGE Deep Well Site, Milford, Utah (Stuart Simmons et al.)

DRILLING

Advanced Percussive Drilling Technology for Geothermal Exploration and Development DE-FOA-EE0005502 (Jiann Su et al.)*

Analysis of Stuck Pipe Incidents in Menengai (Billy Awili et al.)

Application of Outside Casing Water Level Monitoring Tube System in Medium-low Temperature Geothermal Well (Ruan Chuanxia et al.)

Concept of Thermal-Shock Enhanced Drill Bit for Supercritical Geothermal Drilling (Shigemi Naganawa)*

Effect Of Adverse Weather Conditions On The Composition Of Drilling Detergent, A Case Study Of Menengai Geothermal Field. (Samson Ongwae et al.)

Influence of Organic Foaming Agents and PLA Fibers on Properties and Self-degradation of Alkali-activated Cement (Huijing Tan et al.)*

EMERGING TECHNOLOGIES

Electro Pulse Boring (EPB): Promising for Low-cost, Ultra-deep (5-10 km) Access; TRL 2-3 (Bill Leighty)

ENHANCED GEOTHERMAL SYSTEMS

Earth Modeling for EGS Collab (Ghanashyam Neupane et al.)*

Evaluation of Stimulation Methods in Enhanced (Engineered) Geothermal Systems (Travis Broadhurst)

Fracture Designs for the Collab/SIGMA-V Project (Hunter Knox et al.)*

Two Stage Optimization of an Enhanced Geothermal System (EGS) (Pranay Asai)

EXPLORATION

A play fairway approach to geothermal exploration in Crescent Valley, Nevada (Emma McConville et al.)*

Microgravity Survey of Paka Geothermal Prospect (Levi Shako et al.)*

Pressure trends at Cove Fort and Roosevelt Hot Springs geothermal systems provide insight to their flow regimes (Rick Allis et al.)*

Shallow Thermal Anomalies in West-Central Utah (Mark Gwynn et al.)*

U.S. Navy Geothermal Program Office: A Decade Of Developments (Andrew Sabin et al.)

FIELD OPERATIONS / PRODUCTION TECHNOLOGIES

Feasibility Study of Using Pumped Production for Power Generation: A Case Study of MW-17 (Hilary Mwawasi)*

Improved Throttling Calorimeter Steam Quality Measurement (Tom McAuliffe)

Model Organic Rankine Cycle For Brine At Olkaria (Gideon Gitobu)*

Retrievable Inflatable Packer for Wellhead Inspection and Maintenance (Barry Woodrow et al.)*

GEOCHEMISTRY

Chemical and Stable Isotope Characteristics of the Homa Hills Geothermal Prospect, Nyanza Rift, Western Kenya (Leakey Auko et al.)

Comparison and Controls of Thermal Spring Chemistry in Cascade Range and Olympic Mountains Geothermal Provinces, Washington (Jon Golla et al.)*

Hydrochemistry of the hot spring fluids of Villarrica geothermal system in the Andes of Southern Chile (Sebastian Held et al.)*

Study of Hydrothermal alteration, well measurement data, Thermal fluids geothermometry to develop a conceptual model of Sabalan geothermal field, NW Iran. (Elahe Zarei et al.)*

*Also an oral presentation

Chair: Patrick Hanson

GEOLOGY

*Intergration Of Geological Modelling Approach And Gis In Exploration And Well Targeting In The Olkaria Geothermal Area (Bernard Omwenga et al.)**

GEOPHYSICS

*Evolution of Microseismicity at the Blue Mountain Geothermal Site (Dennise Templeton et al.)**

*Fracture and Stress Evaluation Using Well Logs and Microseismicity, in the Exploitation of Los Humeros Geothermal Field, Mexico (Edgar Urban Rascon et al.)**

*Ground-Roll Noise Suppression in Land Surface Seismic Data Using a Wavenumber-Adaptive Bandpass Filter (Yunsong Huang et al.)**

*Improving MT resistivity model resolution with gravity joint inversion: application to geothermal exploration (Pascal Tarits et al.)**

*Magnetotellurics Static Shift Correction Using Transient Electromagnetics Data from Suswa Geothermal Prospect in Kenya (Raymond Mwakirani et al.)**

Review on the study on migration and deposition of particles in porous media (Wanyi Li et al.)

*Using Virtual Earthquakes to Characterize the Seismic Properties of the Brady Geothermal Field (Eric Matzel et al.)**

GEOHERMAL ASSOCIATED WITH OIL & GAS

*Concept for a Distributed Baseload Binary Power Network (Will Gosnold et al.)**

*Downhole Geothermal Power Generation in Oil and Gas Wells (Kai Wang et al.)**

*The UND_CLR Binary Geothermal Power Plant (Will Gosnold et al.)**

HEATFLOW & CLIMATE CHANGE

*Heat Flow and Climate Change (Will Gosnold et al.)**

MODELING & SIMULATION

Application of adaptive fuzzy control in Groundwater Source Heat Pump system (Shuang Guo et al.)

Natural State Modelling of the Menengai Geothermal System, Kenya (Moses Kilimo)

*Optimal Configuration for Low-T Geothermal CHP Plants (Sarah Van Erdeweghe et al.)**

The Exergy of Geothermal Fluids: CO2 versus Water (Phuoc Tran et al.)

OVERCOMING BARRIERS

*Crossing the Barriers: An Analysis of Land Access Barriers to Geothermal Development and Potential Improvement Scenarios (Aaron Levine et al.)**

*Crossing the Barriers: An Analysis of Market Barriers to Geothermal Development and Potential Improvement Scenarios (Kate Young et al.)**

*Crossing the Barriers: An Analysis of Permitting Barriers to Geothermal Development and Potential Improvement Scenarios (Aaron Levine et al.)**

PLAY FAIRWAYS

*Discovery and Analysis of a Potential Blind Geothermal System in Southern Gabbs Valley, Western Nevada (Jason Craig et al.)**

*Geothermal Play Fairway Analysis of the Snake River Plain: Phase 2 (John Shervais et al.)**

POWER OPERATIONS / FLEXIBLE GENERATION / MAINTENANCE

*Case Study: Shell Side Geothermal Power Plant Condenser Cleaning Utilizing Hydrogen Peroxide (H2O2) at The Geysers. (Brian Benn et al.)**

*Failure Mode and Effects Analysis of Hotwell System Motor Operated Butterfly Valve (Victor Ouma)**

*Implementation of Wairakei B Station GRS Upgrade (Tracy Mills et al.)**

*KenGen's Successful Implementation of a Modular Geothermal Wellhead Strategy (Gestur Bardarson et al.)**

*Maintenance of Olkaria 1 Additional Units (AU) Power Plant, Kenya (George Ngomi)**

Optimization of Organic Rankine Cycle Using Low and Medium Temperature Heat Sources in Kenya (Wencheng Fu et al.)

Thermo-Economic Evaluation and Optimization of a Regenerative ORC Cycle Utilizing Geothermal Energy (Saeid Mohammadzadeh bina et al.)

RESERVOIR ENGINEERING/MANAGEMENT/ MODELING

*Olene Gap Resource Assessment Case Study (Richard Holt)**

*Also an oral presentation


	TRACK 1	TRACK 2	TRACK 3
	EXPLORATION: MISC. Chair: Pat Dobson	DIRECT USE/HEAT PUMPS Chair: Xiaobing Liu	DRILLING 4 Chair:
8:00	<i>Post-depositional Alteration Of Siliceous Sinter Near Old Faithful Geyser, Yellowstone National Park, USA. (Bridget Lynne et al.)</i>	<i>Potential For Direct Applications For Geothermal Fluids: Case Study Silali Geothermal Field, Kenya (Michael Lokirima et al.)</i>	<i>An Integrated Workflow to Design Screen/ Slotted Liners in Geothermal Wells (Ruiyue Yang et al.)</i>
8:20	<i>Tracking Micro-fracture And Void Connectivity In Geothermal Host Rocks Using Scanning Electron Microscopy. (Bridget Lynne)</i>	<i>Analysis of operation behavior and numerical simulation of a large-scale borehole field (Shunsuke Tsuya et al.)</i>	<i>Investigating the Effects of Nozzles on the Rate of Penetration in Drilling Geothermal Wells -A Case Study of Menengai Geothermal Field (Collins Changole et al.)</i>
8:40	<i>Geothermal Implications of a Refined Composition-Age Geologic Map for the Volcanic Terrains of Southeast Oregon, Northeast California, and Southwest Idaho, USA (Erick Burns et al.)</i>	<i>Numerical Simulation of The Influence of Embedded Depth of Ground Source Heat Pump on Heat Transfer Effect (Lei Xinbo et al.)</i>	<i>Concept of Thermal-Shock Enhanced Drill Bit for Supercritical Geothermal Drilling (Shigemi Naganawa)*</i>
9:00	<i>Geochemistry Exploration In Southern Honduras (Miguel Garcia et al.)</i>	<i>Numerical Investigation on Reservoir Heat Production Capacity of a Downhole Heat Exchanger Geothermal System (Yu Shi et al.)</i>	<i>Rotary Steerable Systems To Reduce The Cost And Increase The Energy Value Of Drilling Directional Wells In Olkaria Geothermal Field (George Theuri)</i>
9:20	<i>Revised Structural Model For The Tuzla Geothermal Field In Northwest Turkey Based On Moment Tensor Analyses From A 2017 Earthquake Swarm (Metin Tavlan et al.)</i>	<i>Numerical Analysis of Characteristics of a Single U-tube Downhole Heat Exchanger in the Geothermal Reservoir (Xianzhi Song et al.)</i>	<i>Success of High Enthalpy Geothermal Wells in Iceland (Björn Már Sveinbjörnsson)</i>
9:40	9:40 – 10:10 Break		
	EXPLORATION: NEVADA & UTAH Chair: John McLennan	MODELING & SIMULATION: ORCS AND MISC. Chair: Xianzhi Song	FIELD OPERATIONS/DIRECT USE Chair:
10:10	<i>Pressure trends at Cove Fort and Roosevelt Hot Springs geothermal systems provide insight to their flow regimes (Rick Allis et al.)*</i>	<i>The Application Of Auto Disturbance Rejection Control On Expander Of Organic Rankine Cycle System (Lingling Wang et al.)</i>	<i>An overview of binary ORC technology with focus on Turboden's revamp of Lightning Dock plant in New Mexico (Clotilde Rossi di Schio et al.)</i>
10:30	<i>Shallow Thermal Anomalies in West-Central Utah (Mark Gwynn et al.)*</i>	<i>PSO-PID control applied in evaporator of organic Rankine cycle system (Wangsheng Qian et al.)</i>	<i>Field Performance Evaluation of ORC Geothermal Power Plants Using Radial Outflow Turbines (Enrica Biondi et al.)</i>
10:50	<i>A play fairway approach to geothermal exploration in Crescent Valley, Nevada (Emma McConville et al.)*</i>	<i>Modeling of the Effect of Module Size and Material Property on Thermoelectric Generator Power (Kewen Li et al.)</i>	<i>Model Organic Rankine Cycle For Brine At Olkaria (Gideon Gitobu)*</i>
11:10	<i>Hawthorne Army Depot: Update of Geothermal Exploration and Direct Use Applications (Kelly Blake et al.)</i>	<i>Agent-Based Model Coupled with Bayesian Estimation for Evaluation of Social Acceptance of Geothermal Development (Shuntaro Masuda et al.)</i>	<i>Transforming Silica into Silicate – Pilot Scale Removal of Problematic Silica from Geothermal Brine (Thomas Borrmann et al.)</i>
11:30	<i>The Oxygen and Carbon Isotope Systematics of Carbonate Hosted Geothermal Reservoirs at Cove Fort and Thermo, Utah. (Clay Jones et al.)</i>	<i>Fracture Characterization and Thermal Predictions Using Temperature and Tracer Data (Halldora Gudmundsdottir et al.)</i>	<i>Assessment of Occupational Safety and Health Issues Experienced By Workers in Workshops in the Geothermal Industry-Menengai Geothermal Drilling Project (Anne Mwangi et al.)</i>

*Paper is also a poster presentation.


TRACK 4		TRACK 5	
POWER OPERATIONS/FLEXIBLE GENERATION/MAINTENANCE 3 Chair: John Farison		RESERVOIR ENGINEERING/RESERVOIR MANAGEMENT/MODELING 2 Chair: Ghazal Izadi	
8:00	<i>KenGen's Successful Implementation of a Modular Geothermal Wellhead Strategy</i> (Gestur Bardarson et al.)*	<i>Numerical simulations and decision making in the Hellisheiði Geothermal field, SW-Iceland</i> (Gunnar Gunnarsson et al.)	
8:20	<i>Integrated Hybrid Cooling, Direct-Contact Condenser, and H2S Abatement to Lower Operating Costs and Increase Injection</i> (Kenneth McIntush et al.)	<i>Mountain Home Geothermal Area: Natural State Model</i> (Sabodh Garg et al.)	
8:40	<i>Hybrid Geo-Solar Binary Power Plant Supply Curve Analysis</i> (Dan Wendt)	<i>A Numerical Simulation Study of the Wasabizawa-Akinomiya Geothermal Field, Akita Prefecture, Japan</i> (Shigetaka Nakanishi et al.)	
9:00	<i>Hybrid Geo-Solar GeoVision Case Study Analysis: CSP power plant with geothermal boiler feedwater heating</i> (Dan Wendt)	<i>Geothermal Reservoir Channel Located by Pressure Transient Analysis: A Numerical Simulation Case Study</i> (Katie McLean et al.)	
9:20		<i>Temperature Recovery after Long-term Injection: Case History from Soda Lake, Nevada</i> (Jim Lovekin et al.)	
9:40	9:40 – 10:10 Break		
POWER OPERATIONS/FLEXIBLE GENERATION/MAINTENANCE 4 Chair:		ENHANCED GEOTHERMAL SYSTEMS 2 Chair: Trenton Cladouhos	
10:10	<i>New downhole tool designs for EGS based on platform development approach</i> (Benedict Holbein et al.)	<i>Characterization of Hydraulically Induced Fracture in Lab-scale Enhanced Geothermal Reservoir</i> (Lianbo Hu et al.)	
10:30	<i>Global Value Chain and Manufacturing Analysis on Geothermal Power Plant Turbines</i> (Sertac Akar et al.)	<i>Laboratory investigation of permeability evolution in shear stimulation of granite fractures for EGS</i> (Zhi Ye et al.)	
10:50	<i>Failure Mode and Effects Analysis of Hotwell System Motor Operated Butterfly Valve</i> (Victor Ouma)*	<i>Estimating In-Situ Stress, Fracture Properties and Fluid Saturation During The Geysers EGS Demonstration Project</i> (Roland Gritto et al.)	
11:10	<i>Chemical Cleaning and Rejuvenation of Geothermal and Oil wells</i> (Jasbir Gill et al.)	<i>Fundamental Study of Flash Fracturing in High Temperatures Controlled by Depressure Rate</i> (Kenta Takagi et al.)	
11:30		<i>Lessons Learned from the Habanero EGS Project</i> (Robert Hogarth et al.)	



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	ROOM 1	ROOM 2	ROOM 3
	EXPLORATION: MINERAL EXTRACTION & REGIONAL UPDATES Chair:	GEOLOGY & PLAY FAIRWAYS2 Chair:	GEPHYSICS 3 Chair:
1:10	<i>Origins and Geothermal Potential of Thermal Springs in Archuleta County, including Pagosa Springs, Colorado, USA (Revisited)</i> (Paul Morgan)	<i>Updated Conceptual Model of Olkaria Geothermal Field</i> (Joyce Okoo-Odek et al.)	<i>3D Geophysical Inversion Modeling of Ground Magnetic Data at Baker Hot Springs, Washington State, USA</i> (Jeff Witter et al.)
1:30	<i>Potential economic values of minerals in brines of identified hydrothermal systems in the US</i> (Ghanashyam Neupane et al.)	<i>Intergration Of Geological Modelling Approach And Gis In Exploration And Well Targeting In The Olkaria Geothermal Area</i> (Bernard Omwenga et al.)*	<i>Three Dimensional Inversions Of Mt Resistivity Data To Image Geothermal Systems: Case Study, Korosi Geothermal Prospect</i> (Arthur Mathew et al.)
1:50	<i>Do Geothermal Systems Play a Role in Lithium Brine Enrichment in Nevada Playas?</i> (Mark Coolbaugh et al.)	<i>A refined conceptual model for subsidence at Wairakei, New Zealand</i> (Fabian Sepulveda et al.)	<i>Multi-Physics Imaging of the Darajat Field</i> (Wolfgang Soyer et al.)
2:10	<i>Patua Geothermal Geologic Conceptual Model</i> (Trenton Cladouhos et al.)	<i>Applying Play Fairway Analysis for Human Impacts in Geothermal Exploration Site Selction -- A Preliminary Study in Yi-Lan Plain, Taiwan</i> (Chyi Wang et al.)	<i>Fit-for-Purpose Array Electromagnetic Methods for Geothermal Applications</i> (Ingo Geldmacher et al.)
2:30	<i>The Caribbean: a possible energetic transition, but complex</i> (Lynn Manijean et al.)	<i>Discovery and Analysis of a Potential Blind Geothermal System in Southern Gabbs Valley, Western Nevada</i> (Jason Craig et al.)*	
<i>Adjournment 2:50</i>			

*Paper is also a poster presentation.



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	ROOM 4	ROOM 5
	EDUCATION AND COMMUNITY ENGAGEMENT 2 Chair:	RESERVOIR ENGINEERING/RESERVOIR MANAGEMENT/MODELING 3 Session Chair:
1:10	<i>Educational Experiences with a Variety of Geothermal Courses</i> (Aniko Toth et al.)	<i>A Numerical Model Case Study of the Patua Geothermal Field</i> (John Murphy et al.)
1:30	<i>Role of Social Afforestation in Managing Geothermal Development Related Environmental Impacts: Case of Olkaria and Eburru Geothermal Fields in Nakuru County, Kenya</i> (Philip Barasa)	<i>Olene Gap Resource Assessment Case Study</i> (Richard Holt)*
1:50	<i>Potential Socio-Economic Impacts of Baringo-Silali Geothermal Development Project, Kenya</i> (Shammah Kiptanui et al.)	<i>Progress Report: GeoKam - A Modularly Designed Real-time Video Inspection System</i> (Luigi Spatafora et al.)
2:10		<i>Development of numerical simulator for predicting non-equilibrium steam-water flow behavior and its application to estimating steam-water relative permeability</i> (Ishigami Yuki et al.)
2:30		<i>Validation of ECLIPSE Reservoir Simulator for Geothermal Problems</i> (Robert Stacey et al.)
<i>Adjournment 2:50</i>		



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