

44th New Zealand Geothermal Workshop 2022 Programme

Version as 18.11.2022

Tuesday 22 November

3:00	Registration Open
5:30	Welcome Reception University of Auckland Engineering Building
7:00	

Wednesday 23 November

8:00	Registration Open
8:30	Housekeeping: Sadiq J. Zarrouk
8:45	Welcome and Opening: Sadiq J. Zarrouk and John O'Sullivan, Co-Directors, Geothermal Institute, The University of Auckland

9:00	KEYNOTE TITLE: The 10 25 55 (and Counting) Most Common Mistakes in Geothermal Development Keynote Speaker Jim Lawless, Consultant, Lawless Geo-Consulting, New Zealand		
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9:45	MB CENTURY INDUSTRY UPDATE Justin Lloyd, Robert Mandjes		
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10:00	Morning Tea		
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	Session 1.1 - INDUSTRY UPDATES	Session 1.2 - RESERVOIR MODELLING 1	Session 1.3 - ENVIRONMENTAL & SOCIAL
	SESSION CHAIR Mike Allen	SESSION CHAIR Théo Renaud	SESSION CHAIR Ru Nicholson
	Lecture Theatre 401.401	Lecture Theatre 405.460	Lecture Theatre 405.470

10:30	HALLIBURTON INDUSTRY UPDATE	69 MODELLING SOURCE NETWORKS WITH THE WAIWERA GEOTHERMAL FLOW SIMULATOR - John O'Sullivan	11 CHANGING THE WAY WE MANAGE THE ROTORUA GEOTHERMAL SYSTEM - Penny Doorman
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10:45	SEEEQUENT INDUSTRY UPDATE Jeremy O'Brien	40 MODELLING THE ROTORUA GEOTHERMAL SYSTEM - John Burnell	14 METERING GEOTHERMAL TAKES IN ROTORUA – PROJECT UPDATE - Mariana Zuquim
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11:00	AECOM NEW ZEALAND LTD INDUSTRY UPDATE Peter Geoghegan	70 PRODUCTION HISTORY MODELLING OF A LOW ENTHALPY GEOTHERMAL RESERVOIR USED FOR DISTRICT HEATING: EXAMPLE OF THE PARIS SEDIMENTARY BASIN - Joris Popineau	8 GEOTHERMAL LAKES AND POOLS OF THE WAIKATO REGION, NEW ZEALAND - Katherine Luketina
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11:15	SOLENSIS NZ LTD INDUSTRY UPDATE Philip Slijp	34 PROBABILISTIC MWE ESTIMATION USING EXPERIMENTAL DESIGN AND RESPONSE SURFACE METHODOLOGY: FINDINGS FROM FOUR FIELDS - Anthony Ciriaco	13 TAURANGA GEOTHERMAL SYSTEM – AN OVERVIEW - Mariana Zuquim
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11:30	SCHLUMBERGER INDUSTRY UPDATE Jorge Alejandro Ruiz Torres	76 MODELLING A REINJECTION NETWORK - Kevin Koorey	27 RECENT OBSERVATIONS OF GROUND DEFORMATION AT TVZ GEOTHERMAL SYSTEMS USING MULTI-TEMPORAL INSAR - Jim McLeod
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11:45	NALCO WATER /ECOLAB INDUSTRY UPDATE David Rodman, Karl Barrie	2 INTEGRATION OF GEOSCIENCE, GEOMECHANICS AND GEOSTATISTICS METHOD TO MODEL THE FRACTURE DISTRIBUTION IN NATURALLY FRACTURED GEOTHERMAL RESERVOIR - Muhammad Ikhwan <i>VIRTUAL PRESENTATION</i>	32 HERPETOFAUNA SURVEY OF GEOTHERMAL ECOSYSTEMS IN THE WAIKATO REGION - Katherine Luketina
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12:00	XCALIBUR MULTIPHYSICS INDUSTRY UPDATE Craig Annison	78 WELLBORE SIMULATION AND EXERGY PROFILE OF OLKARIA DOMES - Saeid Jalilinasrabady <i>VIRTUAL PRESENTATION</i>	81 2021 ANNUAL NEW ZEALAND GEOTHERMAL VIEW - Ted Montigue
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12:15	Lunch		
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	Session 2.1 - INDUSTRY UPDATES	Session 3.2 - GEOCHEMISTRY	Session 2.3 - PRODUCTION & MANAGEMENT 1
	SESSION CHAIR Samantha Alcaraz	SESSION CHAIR Bridget Lynne	SESSION CHAIR Oliver Maclaren
	Lecture Theatre 401.401	Lecture Theatre 405.460	Lecture Theatre 405.470

1:15	KEYNOTE TITLE: Fluid flow at different scales in the geothermal fields of New Zealand Keynote Speaker Dr Sophie Pearson Grant, Senior Geophysicist, GNS Science, New Zealand		
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2:00	WESTERN ENERGY IMPROVEMENT ON CLEANOUT TECHNOLOGY Josh Anderson		
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2:15	WESTERN ENERGY INDUSTRY UPDATE Karl Spinks	58 APPLIED CO2 FLUX TO MONITOR NATURAL EMISSION FROM GEOTHERMAL FIELD, NEW ZEALAND - Jimmy Yang	37 NON CONDENSABLE GAS REINJECTION TRIAL AT NGATAMARIKI GEOTHERMAL POWER PLANT - Shima Ghafar
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2:30	NZGA INDUSTRY UPDATE Kennie Tsui	56 HOT OR COLD: A REVIEW OF GEOTHERMOMETRY AT THE KAWERAU AND NGĀ TAMARIKI FIELDS, TAUPŌ, NEW ZEALAND - John Mering	28 DIGITIZATION OF NGATAMARIKI GEOTHERMAL POWER PLANT - Mohamed Dabbour
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2:45	MARUBENI-ITOCHU TUBULARS OCEANIA INDUSTRY UPDATE Christian Tedaldi	10 TE PUIA SPRINGS, GISBORNE, PAST AND PRESENT FLUIDS - Agnes Reyes	53 THE STEAMFIELD PROCESS DESIGN AND OPTIMISATION TOOL (SPDOT) - Cristo Umanzor
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3:00	Afternoon Tea		
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	Session 3.1 - INDUSTRY UPDATES	Session 2.2 - GEOPHYSICS	Session 3.3 - PRODUCTION & MANAGEMENT 2
	SESSION CHAIR Scott Henderson	SESSION CHAIR Bridget Lynne	SESSION CHAIR Eylem Kaya
	Lecture Theatre 401.401	Lecture Theatre 405.460	Lecture Theatre 405.470

3:30	NZTE - Indonesia INDUSTRY UPDATE Putri Wuningsari <i>VIRTUAL PRESENTATION</i>	15 AIRBORNE GRAVITY, ELECTROMAGNETIC AND MAGNETIC DATA FOR GEOTHERMAL EXPLORATION - Craig Annison	36 CONCEPTUAL MODEL UPDATE FOR THE ROTOKAWA GEOTHERMAL FIELD, NEW ZEALAND - Aimee Calibugan
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3:45	NZTE - Philippines INDUSTRY UPDATE Maricon Popanes-Lim <i>VIRTUAL PRESENTATION</i>	65 SURFACE HEAT LOSS ASSESSMENT OF GEOTHERMAL FIELDS IN THE TAUPŌ VOLCANIC ZONE, USING REMOTE AND TERRESTRIAL TECHNIQUES - Anya Seward	47 CHEMICAL DOSING FOR TE MIHI GEOTHERMAL STATION COOLING TOWERS: UPDATE - Morris Young
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4:00	NZTE Taiwan INDUSTRY UPDATE Peg Tsai <i>VIRTUAL PRESENTATION</i>	41 SHALLOW GEOPHYSICAL TOOLS TO INVESTIGATE THE POTENTIAL EXTENT OF SUBSIDENCE ANOMALIES ASSOCIATED WITH HYDROTHERMALLY ALTERED AND COMPRESSIBLE CLAYS - Chris Bromley	33 DELIVERABILITY CURVE ANALYSIS FROM FLOW PERFORMANCE TEST DATA - Ahmad Fahmi Fanani <i>VIRTUAL PRESENTATION</i>
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4:15	NZTE - Japan INDUSTRY UPDATE Jessica Tisch <i>VIRTUAL PRESENTATION</i>	80 EFFECTS OF REINJECTING DILUTED POOL WATER INTO THE ROTORUA GEOTHERMAL SYSTEM - Lucjan Sajkowshi	
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Thursday 24 November

8:45	Housekeeping: Sadiq J. Zarrouk		
9:00	KEYNOTE TITLE: Geothermal Outlook in Africa: Opportunities and Challenge. Keynote Speaker: Dr Mereset Zemedkun, Head of UNEP Southern Africa Offices and Lead on Regional Energy Programme in Africa, UNEP		
9:45	GEO THERMAL INSTITUTE INDUSTRY UPDATE Sadiq Zarrouk, John O'Sullivan		
10:00	Morning Tea		
	Session 4.1 - INDUSTRY UPDATES	Session 4.2 - RESERVOIR MODELLING 2 / SCALING AND CORROSION	Session 4.3 - DIRECT USE
	SESSION CHAIR Brian White	SESSION CHAIR John O'Sullivan	SESSION CHAIR Bart van Campen
	Lecture Theatre 401.401	Lecture Theatre 405.460	Lecture Theatre 405.470
10:30	UPFLOW INDUSTRY UPDATE Paul Siratovich	3 ANALYSING CYCLIC WELL BEHAVIOUR VIA TIME SERIES ANALYTICS AND RESERVOIR SIMULATION - Paul Michael Abrasaldo	22 TAURANGA GEOTHERMAL SYSTEM: TEMPERATURE DISTRIBUTION - Lucie Janku
10:45	EASTLAND ENERGY INDUSTRY UPDATE Ben Gibson or Alice Pettigrew	73 FIXED AND RANDOM EFFECTS ERROR MODELS FOR GEOTHERMAL SIMULATOR CALLIBRATION - Oliver Maclaren	82 EFFECT OF RAINFALL ON LOW-HEAT GROUND SOURCE HEAT PUMPS IN NEW ZEALAND - Brad Mudgway
11:00	WAIKATO REGIONAL COUNCIL INDUSTRY UPDATE Katherine Luketina	7 INSIGHTS FROM REACTIVE TRANSPORT MODELS BASED ON BASALT-WATER EXPERIMENTS - Dale Emet Alter	57 ANALYTICAL AND NUMERICAL MODELLING OF A COAXIAL BOREHOLE HEAT EXCHANGER TO EXTRACT GEOTHERMAL ENERGY - Rohit Duggal
11:15	BAY OF PLENTY REGIONAL COUNCIL INDUSTRY UPDATE Penny Doorman	17 EXPLORING THE USE OF TEMPERATURE TRANSIENT ANALYSIS DURING PRESSURE FALLOFF TESTING IN GEOTHERMAL WELLS – Sadiq J. Zarrouk	21 COMMERCIAL ARRANGEMENTS UNDERPINNING AOTEAROA NEW ZEALAND'S INDUSTRIAL SCALE GEOTHERMAL OPERATIONS - Isabelle Chambefort
11:30	JACOBS INDUSTRY UPDATE Alex Batten	52 MOVING THE CALCIUM SILICATE (CASIL) PILOT PLANT TO KAWERAU - Thomas Borrmann	6 THE TE AROHA LOW ENTHALPY GEOTHERMAL SYSTEM, NEW ZEALAND: REVIEW AND ANALYSIS - Katherine Luketina
11:45	WING INDUSTRY UPDATE WING Committee Members	77 SCALING RATE REDUCTION AT WAIRAKEI BINARY THROUGH APPLICATION OF SCALE INHIBITOR - Sophia Richardson	62 ESTIMATION FOR HEAT LOSS TO THE WORKING FLUID IN THE HEAT EXCHANGER OF AN ORGANIC RANKINE CYCLE FOR A GIVEN CONCENTRATION OF GASES - Anu Choudhary
12:00	CONTACT ENERGY INDUSTRY UPDATE Jacqui Nelson	31 IMPROVED ENERGY HARVEST POTENTIAL FROM HIGHLY CORROSIVE GEOTHERMAL FIELDS: LABORATORY FORMULATION DEVELOPMENTS - Cheng-yueh Wu <i>VIRTUAL PRESENTATION</i>	79 PROPOSAL OF CROP DRYING BY ANALYSIS OF GRAIN FARMS WITHIN CLOSE PROXIMITY OF MENENGAI GEOTHERMAL RESOURCE IN KENYA VIA REMOTE SENSING - John Ngethe <i>VIRTUAL PRESENTATION</i>
12:15	Lunch		
1:15	KEYNOTE TITLE: Global Geothermal Exploration and Growth – the Ormat Case Study Keynote Speaker Robin Zuza, Director of Global Exploration, Ormat Technologies, Inc., USA		
2:00	GNS SCIENCE INDUSTRY UPDATE Isabelle Chambefort, John Kennedy		
	Session 5.1 - NEW MBIE INVESTMENT		
	SESSION CHAIR Mark Battley		
	Lecture Theatre 401.401		
2:15	MBIE INVESTMENT TRENDS - Alison Slade, Principal Investment Manager & Fund Lead for the Endeavour Fund , MBIE		
2:30	REVERSING CARBON EMISSIONS IN GEOTHERMAL ENERGY PRODUCTION: TE ARA WHAKAMUA - Sadiq Zarrouk, Eylem Kaya		
2:45	GREATER ELECTRICITY GENERATION AND INDUSTRIAL HEAT OPPORTUNITIES FROM EXISTING AND GREENFIELDS GEOTHERMAL RESOURCES - Jim Johnston		
3:00	ADAPTING TO CLIMATE CHANGE THROUGH STRONGER GEOTHERMAL ENTERPRISES - Shane Cronin		
3:15	PŪHIKO NUKUTŪ: A GREEN HYDROGEN GEOSTORAGE BATTERY IN TARANAKI - David Dempsey		
3:30	DISCUSSION		
3:45	Afternoon Tea		
	Session 6.1 - REFLECTIONS ON OUR ENERGY STUDY TOUR IN ICELAND - SPONSORED BY THE GEOTHERMAL INDUSTRY	Session 6.2 - GEOTHERMAL GEOLOGY	Session 6.3 - NEW & EMERGING TECHNOLOGY BEING OFFERED IN NEW ZEALAND
	SESSION CHAIR Kennie Tsui	SESSION CHAIR Rony Nugraha	
	Lecture Theatre 401.401	Lecture Theatre 405.460	Lecture Theatre 405.470
4:15	Nga Tauira o Rūaumoko: Dotty Raroa Mahora Hepi-Manuel Keiha Nicol	24 GEOTHERMAL: THE NEXT GENERATION - ADVANCING THE UNDERSTANDING OF NEW ZEALAND'S SUPERCRITICAL RESOURCES – PROGRAMME UPDATE - Isabelle Chambefort	Open discussion moderated by: Sadiq J. Zarrouk (Geothermal Institute) and Jaime Quinao (Jacobs)
4:30	Corey Ruha (<i>VIRTUAL</i>)	83 HISTORIC FLOW CONDITIONS PRESERVED IN SILICEOUS SINTER VENT WALLS OF THREE NEWLY-EXPOSED HOT SPRING VENTS AT ORAKEI KORAKO, NEW ZEALAND - Bridget Lynne	
5:00	NZGA AGM		
6:30	NZGW Conference Dinner		
10:30	Wētā Workshop Unleashed SkyCity		

Friday 25 November

9:15	Housekeeping: Sadiq J.Zarrouk		
9:30	TRIVENI TURBINES INDUSTRY UPDATE Bharat Sanghi		
9:45	TAHEKE PROJECT UPDATE Aroha Campbell		
10:00	Morning Tea		
	Session 7.1 - INDUSTRY UPDATES	Session 7.2 - FUTURE	Session 7.3 - DRILLING and WELL TESTING
	SESSION CHAIR Katie McLean	SESSION CHAIR Michael Gravatt	SESSION CHAIR Paul Michael Abrasaldo
	Lecture Theatre 401.401	Lecture Theatre 405.460	Lecture Theatre 405.470
10:30	WING PANEL - Paving the way: A WING-led discussion on the tangible returns of progressive values and policies in the workplace Chair: Gabby Buchanan (WING/Western Energy) Panellists: Robin Zuza (Ormat Technologies), Jan Bibby (Contact Energy), Guillermo Merelo (The University of Auckland) and Ben Pezaro (Mercury)		
11:00	MERCURY ENERGY INDUSTRY UPDATE Beth Wotherspoon	30 GRADUATE GEOTHERMAL TRAINING IN THE EUROPEAN ECONOMIC AREA - Juliet Newson	38 QUANTITATIVE PHASE ANALYSIS OF HTCC-EM LOGS - Richard Williams
11:15	FLOW STATE SOLUTIONS LTD INDUSTRY UPDATE Jonathon Clearwater	39 AN AUSTRALIAN GEOTHERMAL RENAISSANCE? - Rosalind Archer <i>VIRTUAL PRESENTATION</i>	45 DEVELOPMENT OF DOWNHOLE COOLING CHARTS TO PREVENT DRILLING PROBLEMS IN GEOTHERMAL WELLS THROUGH WELLBORE TEMPERATURE SIMULATION - Sara Ishikawa <i>VIRTUAL PRESENTATION</i>
11:30	STRIKE STIMULATION AN INNOVATION IN GEOTHERMAL WELL STIMULATION - RECENT PATENT APPLICATION FILED Mark Horwell	23 GEOTHERMAL HYDROGEN WELL MODELLING - Isaac Severinsen	4 LWD ACQUISITION OF CALIPER AND DRILLING MECHANICS ON GEOTHERMAL DRILLING OPERATION, A CASE STUDY IN SORIK MARAPI FIELD – INDONESIA - Nikolai Sirait
11:45	MITCHELL DAYSH INDUSTRY UPDATE Noel Kortright	25 CARBON NEGATIVE GEOTHERMAL: FINANCIAL ANALYSIS FOR COMBINED GEOTHERMAL, BIOENERGY AND CARBON DIOXIDE REMOVAL - Karan Titus	12 3-D MODELLING OF SOKORIA GEOTHERMAL FIELD, ENDE, FLORES, INDONESIA - Larasati Triwening <i>VIRTUAL PRESENTATION</i>
12:00	Lunch		
1:00	Workshop awards and close - Sadiq J. Zarrouk, John O'Sullivan		
1:15 - 2:15	GEOTHERMAL RISING STUDENT CHAPTER (NEW ZEALAND & OCEANIA) INAUGURAL MEETING 1. Introduction and importance of the chapter - Kennie Tsui		

2. Introduction to Geothermal Reservoir Modelling - John Burnell
3. Carbon dioxide emissions from geothermal power generation - Katie McLean
4. Closing Remarks