



UNDERWATER MINERALS CONFERENCE



Sunday, September 15, 2024 - WELCOME RECEPTION

INTRODUCTION by Dr. John Wiltshire - Welcome; Introduce IMMS, Volunteers, Staff and HOST - Speech by HOST

16:00 PRE-REGISTRATION STARTS - Desk located at the Tamarind House Restaurant

17:00 begin
22:00 end

WELCOME COCKTAIL AT THE TAMARIND HOUSE RESTAURANT

Monday, September 16, 2024 - TECHNICAL SESSIONS I and II

#	Time	Presenter	Affiliation	Country	Title
	8:00	REGISTRATION STARTS - Desk located at the National Auditorium			
	8:30	Session Chair Dr. Philomene Verlaan	Advisory Committee on Protection of the Sea (ACOPS)	UK	INTRODUCTION to Presentations of Technical Session I - Seabed Minerals and Their Development
1	8:35	Kristoffer Solvi	Norwegian Offshore Directorate	Norway	Status on the first licensing round for seabed minerals on the Norwegian continental shelf
2	9:00	Jeffrey Reidenauer	Bureau of Ocean Energy Management	USA	BOEM-Funded Critical Minerals Research on the United States Outer Continental Shelf
3	9:25	Alex Herman	SBMA	Cook Islands	Overview of the development of the Cook Islands seabed minerals sector
4	9:50	Chris Castle	Chatham Rock Phosphate Limited	New Zealand	Development of the Chatham Rise marine phosphate deposit will result in an economic and environmental win-win
	10:15	Coffee Break - 20 minutes			
5	10:35	Anette Broch Tvedt	ADEPTH MINERALS AS	Norway	Data-Driven Environmental and Resource Exploration
6	11:00	Max Kaufmann	Odyssey Marine Exploration	USA	Supplementing resource estimation with domain establishment from trained remote sensing acoustics
7	11:25	Andreina Garcia Reyes	ABYSSA	France	Near-seafloor magnetic surveys: good processing is the key!
8	11:50	Stephanie Tay	RSC	New Zealand	Beyond the Inferred Classification in Seabed Nodule Deposit Estimation: Establishing the Short-Range Variability
	12:15	LUNCH Break - 1 hour			
9	13:15	Robert Ditchburn	GNS Science	New Zealand	Dating Cu-Au-rich hydrothermal mineralization associated with ring faults using 226Ra and 228Ra
10	13:40	Nadia Aarab	DeepOcean Group	Norway	EMINENT PROJECT: A Holistic Approach to Deep Sea Minerals
	14:05	Session Chair Dr. John Wiltshire	University of Hawaii	USA	INTRODUCTION to Presentations of Technical Session II - Regulations and Legal Considerations
11	14:10	Devon Whittle	Watson Farley & Williams	Australia	Protecting and Preserving the Marine Environment: Surveying the latest International Seabed Authority Draft Exploitation Regulations
12	14:35	Kenta Matsumoto	The University of Queensland	Japan	Report from Japan - Recent DSM activities in Japan's EEZ and experts' outlook on them
	15:00	Coffee Break - 20 minutes			
13	15:20	Aiste Klimasauskaite	University of Bergen	Norway	Blue (un)certainties: deep-sea mining policy process in the Arctic Mid-Ocean Ridge, Norway
14	15:45	Elena Guillet	Vinson & Elkins RLLP	UK	Legal and logistical challenges in deep-sea mining exploitation
15	16:10	Jo Feldman	Norton Rose Fulbright	Australia	Managing legal and social risks around commercial exploitation of commodities from the global commons
16	16:35	Farida Mustafina	NTNU	Norway	Tax regime analysis for deep-sea mining applying a multi-objective optimization approach using genetic algorithms
	17:00	End of the day			



UNDERWATER MINERALS CONFERENCE



Tuesday, September 17, 2024 - TECHNICAL SESSIONS III, IV and V

#	Time	Presenter	Affiliation	Country	Title
	8:30	Session Chair Dr. Mark Luther	University of South Florida	USA	INTRODUCTION to Presentations of Technical Session III - Support Technologies
17	8:35	Eric Macris	Viridian Biometals	USA	Clean, low-cost metals refining via bacteria that breathe rocks
18	9:00	Laurens de Jonge	Royal IHC	Netherlands	Crust Excavation Challenge: Breakthrough Innovative Technologies
19	9:25	Kenneth Williams	University of Newcastle	Australia	International Maritime Safety considerations for safe transportable moisture limits when shipping deep sea materials
20	9:50	Jim Wodehouse	Deep Reach Technology Inc.	USA	Status Report on the Ship TO Shore Polymetallic Nodules Transportation Joint Industry Project
	10:15	Session Chair John Parianos	Seabed Minerals Authority, Cook Islands	Cook Islands	INTRODUCTION to Presentations of Technical Session IV - Pacific Session
21	10:20	Nobuyuki Okamoto	Deep Ocean Resources Dev. (DORD)	Japan	Japan's contribution to the preliminary assessment of seabed mineral potential in the EEZs of Pacific Island countries
	10:45	Coffee Break - 15 minutes			
22	11:00	John Parianos	SMBA	Cook Islands	A regional seabed geomorphology interpretation of part of the Pacific Plate
23	11:20	Jerome Aucan	Pacific Community (SPC)	New Caledonia	Supporting Sustainable Pacific Development Through Science, Knowledge, and Innovation
24	11:45	Malcolm Clark	NIWA	New Zealand	The effects of sedimentation in the deep sea: Emerging results from the Chatham Rise on the impacts of seabed disturbance
25	12:10	Rima Browne	SBMA	Cook Islands	Habitat Management Zones for the Cook Islands Seabed as part of Strategic Environment Assessment
26	12:35	Jeremy Visser	BMT	Australia	Effects Assessment for a Strategic Environmental Assessment of Seabed Minerals in the Cook Islands
	13:00	LUNCH Break - 1 hour			
27	14:00	Rose Strickland	NES	Cook Islands	Seabed Minerals Environmental Scoping Exercises within the Cook Islands Environment (Seabed Minerals Activities) Regulation 2023
28	14:25	Pierre-Yves Le Meur	IRD	New Caledonia	The politics of deep-sea mining in the French Pacific. Sovereignty, indigeneity, environment
29	14:50	Juliette Dael	NIWA	New Zealand	Contribution to mapping the seabed of the Cook Islands
30	15:15	Steve Raaymakers	EcoStrategic	Australia	Navigating Deep Sea Mining Perspectives in Pacific Island States
	17:00	Session Chair Dr. Mark Luther	University of South Florida	USA	Technical Session V: Pre-Banquet POSTER SESSION in front of the National Auditorium (open bar)
1		Andreina G. Reyes	ABYSSA	France	AUVs: Are deep-sea magnetic sources getting closer to us?
2		Megan Carr	BOEM	USA	A Brief History of Offshore Mineral Development in the USA
3		Simon Nielsen	CIC	Cook Islands	Nodules as NORMs
4		Jesse van der Grient	DOSI	UK	The State of Biological Knowledge in the CCZ: is it sufficient?
5		Patricia E. Garrote	DOSI	Portugal	How much science is enough? A case study in the CCZ
6		Rebekka Larson	Eckerd College	USA	Applications of multiproxy approaches to evaluate events
7		Josh Marsh	Environmental Tracing	Scotland	The use of existing tracer technology to measure sediment and plumes
8		Garrett Mitchell	FUGRO	USA	The Potential for Improved Real-Time Environmental Monitoring Technology
9		Sang Bum Chi	KIOST	Korea	The Status and Prospects of Polymetallic Nodules Mining in the CCZ for Korea
10		Sun Ki Choi	KIOST	Korea	Mineralogical and geochemical characteristics of the Maru vent fields
11		Anna Scott	Mithril Minerals, Inc.	Australia	A Distributed Mechanical Polymetallic Nodule Collection System
12		Adrian Glover	Natural History Museum, UK	UK	The Deep-Sea Research Group at the Natural History Museum, UK
13		Tetsuo Yamazaki	Osaka Metropolitan Univ.	Japan	Similarities of production technology between sulfides and methane hydrates
14		Campbell McKenzie	RSC	New Zealand	On the (mis)use of Certified Reference Materials in Deep-sea Nodule Projects
15		Ed Herman	SBMA	Cook Islands	Key stakeholder groups and consultation approach in the Cook Islands
16		Tanga Morris	SBMA	Cook Islands	Recent Megafauna Logging from different parts of the Cook Islands Seabed
17		Latishia Maui	SBMA	Cook Islands	Regulatory Framework for Seabed Minerals Activities in the Cook Islands
18		Rima Browne	SBMA	Cook Islands	Women in Science Expedition
19		Alexander Moelle	TU Bergakademie Freiberg	Germany	Underwater Position and Orientation Estimation utilizing an Inertial Navigation
	19:00	52nd UMC BANQUET At the National Auditorium (all included)			
	22:00	End of the day			



UNDERWATER MINERALS CONFERENCE



Wednesday, September 18, 2024 - TECHNICAL SESSIONS VI and VII

#	Time	Presenter	Affiliation	Country	Title
	8:30	Session Chair Dr. Charles Morgan	Moana Hohonu Consulting	USA	INTRODUCTION to Presentations of Technical Session VI - Mining and Autonomous Technologies
31	8:35	Ernie Tapanes	Impossible Metals	Canada	Results from testing Eureka II Selective Harvesting AUV
32	9:00	Oliver Gunasekara	Impossible Metals	USA	Impossible Metals Roadmap to Full Scale Testing with Eureka III
33	9:25	Guocheng Zhao	Shanghai Jiao Tong University (SJTU)	China	Environmental Impacts of Deep-sea Mining Can Be Significantly Reduced by Optimizing the Parameter Combination of Polymetallic Nodules Mining
34	9:50	David Kailey	Xymat Co	USA	Advanced Manufacturing Methods and Materials for Designing Vertical Transport Riser Systems
35	10:15	Stefan Wegerer	Bauer Maschinen GmbH	Germany	Deep Sea Sampling - feasibility study of a pilot-mining concept
	10:40	Coffee Break - 20 minutes			
36	11:00	Aaron Barr	Transocean, GSR	USA	Application and Comparison of a Seabed Nodule Collection and Surface Vessel Test Concept for the Cook Islands and Clarion Clipperton Zone
37	11:25	Guido van den Bos	NOV	Netherlands	NOV SkipLift, a vertical batch transport system for deepsea minerals extraction based on a fiber rope subsea winch
38	11:50	Jake Russell	Orpheus Ocean	USA	Orpheus AUV: A New Paradigm for Deep Sea Environmental Assessment
39	12:15	Craig Wallace	Deep Sea Vision	USA	Whose sound is true? Synthetic Sonars for mineral classification
	12:40	LUNCH Break- 1 hour			
	13:40	Session Chair Dr. Samantha Smith	Blue Globe Solutions/GSR	Canada	INTRODUCTION to Presentations of Technical Session VII - Environmental
40	13:45	Mike Williams	NIWA	New Zealand	Recovery of benthic communities in the deep sea: examples from multiple New Zealand habitats and disturbance types
41	14:10	Bryan O'Malley	Ecofera	USA	A tale of two tracks: Immediate, annual, and decadal scale impacts and recovery of forams from the NORI and OMCO test areas
42	14:35	Patrick Schwing	Eckerd College	USA	A multi-proxy geochemical approach for constraining the extent of deep-sea mining collector sediment plumes
43	15:00	Andrew K. Sweetman	Scottish Association for Marine Science	Scotland	Biodiversity and community structure of benthic and demersal scavengers at inactive and active hydrothermal areas
	15:25	Coffee Break - 20 minutes			
44	15:45	Adrian Glover	Natural History Museum, London	UK	Impacts of an industrial deep-sea mining trial on seafloor biodiversity
45	16:10	Virginie Tilot	National Museum of Natural History, France	France	Vulnerability of pelagic ecosystems to deep sea mining, integrative strategy to minimize cumulative impacts
46	16:35	Jesse van der Grient	Deep-Ocean Stewardship Initiative (DOSI)	UK	Baseline environmental information for the deep pelagic micronekton of the CCZ
47	17:00	Adrian Flynn	Moana Minerals	Cook Islands	Getting the Science Right: but what is the right science?
	17:30	Session Chair Dr. Sam Smith	Blue Globe Solutions/GSR	Canada	Addressing Environmental NGO Concerns: Opening an Honest and Transparent Dialogue
	18:15	End of the day			



UMC 2024 UNDERWATER MINERALS CONFERENCE



Thursday, September 19, 2024 - TECHNICAL SESSIONS VII and VIII

#	Time	Presenter	Affiliation	Country	Title
8:00 IMMS Annual General Meeting (all are welcome)					
	8:30	Technical Chair Dr. Samantha Smith	Blue Globe Solutions/GSR	Canada	Continuation of Technical Session VII - Environmental
48	8:35	Pedro Madureira	INESC TEC	Portugal	TRIDENT – (Technology based impact assessment tool for sustainable, transparent deep sea mining exploration and exploitation) – OVERVIEW
49	9:00	Andy Banks	DHI	USA	Validating Modeled Sedimentation Footprints via AUV Photographic Imagery
50	9:25	Daniel Jones	National Oceanography Centre	UK	Extent of long-term impact and biological recovery in a deep-sea mining track after 44 years
51	9:50	Belen Arias	Natural History Museum, London	UK	The environmental impacts of deep-sea mining
10:15 Coffee Break - 20 minutes					
	10:35	Technical Chair Dr. Eusenio Fatialofa	Cobalt Mineral Resources (CSR)	Cook Islands	CSR Knowledge Sharing Session
	10:35				Topic 1: Introduction to Cobalt Seabed Resources and Perspectives from a Cook Islander
	11:05				Topic 2: Shifting sands: deep-sea mining in an era of global change
12:30 Lunch Break - 1.25 hours					
	13:45				Topic 3: Exploration: learnings and continual improvement
	14:40				Topic 4: Environmental management of marine minerals: baseline study, impact assessment, and monitoring learnings so far
15:40 Coffee Break - 20 minutes					
	16:00				Topic 5: Learnings so far: benthic and pelagic sediment plumes
	16:20				Topic 6: Incorporating learnings from deep-sea trials (Patania II trial) into future technology developments
	17:00				Topic 7: The COMPASS programme - environmental monitoring and adaptive management in (almost) real time
	17:30				End of the day

Friday, September 20, 2024 - FIELD TRIP

FIELD TRIP:	
10:00	Captain Tama's Muri Lagoon Glass Bottom Boat Cruise (registration required)
	Be entertained by Captain Tama's and his crew on this once in a lifetime, most unforgettable experience. Watch the magical Muri Lagoon through the glass bottomed boat, listen to island stories with typical Cook Island humour. Leap off the boat, snorkel and meet the reef fish up close and personal. Or chill out and float above the coral paradise. After snorkelling the crew will entertain you with hilarious coconut husking demo's as well as how to shimmy up a coconut tree. Their demonstration of 100 ways to tie a sarong will have you in stitches. Includes: Snorkeling Gear Fresh Fish BBQ Lunch Hotel Bus Transfers Bring: Towels Swimwear Environmentally friendly Sunblock Camera
16:00	End of the day

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