



UNDERWATER MINERALS CONFERENCE 2022

Order	Time	Presenter	Affiliation	Country	Title
Sunday, October 2, 2022 - WELCOME RECEPTION					
INTRODUCTION by Dr. Mark Luther - Welcome; Introduce IMMS, Volunteers and Staff					
18:00 begin					
21:00 end					
WELCOME COCKTAIL AT THE ST. PETERSBURG YACHT CLUB					
Monday, October 3, 2023 - TECHNICAL SESSIONS I and II					
8:50					
Call to Order by Technical Chair Dr. Samantha Smith; Introduce Host and Technical Co-Chair, Dr. Mark Luther					
#	8:50	Technical Co-Chair Dr. Mark Luther	University of South Florida	INTRODUCTION to Presentations of Technical Session I Sustainability and Background Information	
1	9:00	Rahul Sharma	National Institute of Oceanography, Goa	India	Techno-economic assessment of deep-sea mining
2	9:25	Espen Simonstad	Green Minerals AS	Norway	Turning the resource into a commodity
3	9:50	Marte Rusten	DNV	Norway	An Environmental, Social and Governance (ESG) handbook for marine minerals
4	10:15	Aaron Barr	Transocean	USA	Risk Management Techniques and Application to Deep-Sea Mineral Harvesting
10:40					
Coffee Break - 20 minutes					
11:00					
INTRODUCTION to Presentations of Technical Session II Environmental Baseline and Marine Mineral Resources Exploration					
5	11:00	Tetsuo Yamazaki	Osaka Metropolitan University	Japan	Ecosystem modeling of chemosynthesis around mound type methane hydrate
6	11:25	Udo Barckhausen	BGR	Germany	Seafloor massive sulphide exploration in the German ISA license area (Indian Ocean)
7	11:50	Kira Mizell	USGS	USA	Data needs for continued consideration of ferromanganese crusts as a potential deep ocean mineral resource
8	12:15	Katz Suzuki	JAMSTEC	Japan	Age constraints through osmium isotope stratigraphy and chemical compositions of the ferromanganese crusts from the Iwaki seamount
12:40					
LUNCH Break- 1.2 hours					
9	14:00	Paul Knorr	BOEM	USA	Offshore Environmental-Resource Exploration in the U.S. Exclusive Economic Zone
10	14:25	Jon Wood	Ocean Data Technologies	USA	Long-term monitoring of ocean currents in the tropical North Pacific from the sea surface to the deep benthic boundary layer
11	14:50	Rick Cole	RDSEA	USA	A Dual ADCP-SMS mooring system survives incredible odds in the Pacific Ocean, an eight year journey
12	15:15	Patrick Schwing	Eckerd College	USA	Establishing benthic radiochemical, sedimentological, organic, and foraminifera baselines prior to test mining in the CCZ
15:40					
Coffee Break - 20 minutes					
16:00					
INTRODUCTION to Presentations of RETROSPECTIVE SESSION A Look Back at the Deep Seabed Mining Trials of the 1970s and 1980s					
13	16:00	John Halkyard	Deep Reach Technology	USA	The beginning: John Mero's 1959 Report
14	16:10	John Halkyard	Deep Reach Technology	USA	Reminiscences of a young engineer's experiences with Ocean Mining in the 1970's
15	16:25	Tom Dettweiler	TKD Enterprises	USA	A few of OMA's deepest, darkest secrets
16	16:40	Ted Brockett	Brockett Ocean Services	USA	Ocean Management, Inc. (OMI) – Brief history and philosophy leading to the successful nodule pilot mining tests in 1978
17	16:55	Richard Petters	Ozean Engineering	USA	Mishaps behind the success of OMI's pilot mining tests, and lessons learned
18	17:10	Charles Morgan	Moana Hohonu Consulting	USA	Ocean Minerals Company (OMCO) Miner Test
17:25					
PANEL					
Q&A and Panel Discussion					
17:35	Sherman Wetmore			USA	Howard Hugh's "Deep Ocean Mining Program": Project Azorian movie to be aired following the session
17:50					
MOVIE: Azorian: The Raising of the K-129 (snacks will be served)					
19:35					
End of the day					



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Tuesday, October 4, 2022 - TECHNICAL SESSIONS III and IV

#	8:50	Session Chair Dr. Charles Morgan	Moana Hohonu Consulting		INTRODUCTION to Presentations of Technical Session III - Current Marine Minerals Studies and Exploration Technology
19	9:00	Matthias Semel	Bauer Maschinen GmbH	Germany	The Vertical Approach: sustainable exploration of mineral resources in the deep sea
20	9:25	Sean Aldrich	RSC Consulting Ltd	New Zealand	Communicating data quality for polymetallic nodule projects
21	9:50	Ebbe Hvidegård Hartz	Aker BP	Norway	Dynamic models as marine mineral prospecting tools
22	10:15	Alden Denny	Adepth Minerals	Norway	Core - key to the SMS and OCC puzzle
	10:40	Coffee Break - 20 minutes			
23	11:00	Anna Lim	Argeo	Norway	Target-driven approach to deep-sea mineral exploration with AUVs
24	11:25	Michael Ehrhardt	Fraunhofer-Institute for Biomedical Engineering	Germany	Volumetric acoustic measurements on polymetallic nodules using a 3D sonar system for surface density estimation on the sea floor
25	11:50	Mark Luther	University of South Florida	USA	Exploratory Data Analysis/Synthesis in Support of Cook Islands Nodule Exploration
26	12:15	Harald Brekke	Norwegian Petroleum Directorate (NPD)	Norway	Deep Sea Minerals on the Norwegian Continental Shelf – activities and data
	12:40	LUNCH Break- 1 hour			
	13:40	In-Person Poster Presentations			
	14:20	Session Chair Dr. James Hein	US Geological Survey		INTRODUCTION to Presentations of Technical Session IV - Current State of the Art Technology Trials & Learnings
27	14:25	Samantha Smith	GSR	Canada	Patania II: Leveraging independent international scientific engagement towards the responsible management of deep seabed resources
28	14:50	Annemiek Vink	BGR	Germany	Monitoring the environmental impacts of the Patania II collector tests at challenging water depths
29	15:15	Matthias Haeckel	GEOMAR Helmholtz Centre for Ocean Research	Germany	Environmental impacts & risks of deep-seabed mining
	15:40	Coffee Break - 20 minutes			
30	16:00	Iason Zois-Gazis	GEOMAR Helmholtz Centre for Ocean Research	Germany	Deep-sea mining plume monitoring: Results from the first trial of the Patania-II and plume monitoring with hydroacoustic and optic methods
31	16:25	Kaveh Purkiani	GEOMAR Helmholtz Centre for Ocean Research	Germany	Numerical simulation of deep-sea sediment dispersion induced by a pre-prototype nodule collector vehicle
32	16:50	Thomas Peacock	MIT	USA	State-of-the-art, integrated monitoring and modeling of nodule mining sediment plumes
33	17:15	Souha El Mousadik	MIT	USA	Novel LISST-RTSSV for in-situ particle size characterization of deep-sea mining sediment plumes
	17:40	MOVIE LAUNCH: TOUCHDOWN: The story of Patania II (snacks and drinks will be served)			
	19:00	End of the day			



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Wednesday, October 5, 2022 - TECHNICAL SESSION V and VI

#	8:00	IMMS Annual General Meeting (all are welcome)			
	8:50	Technical Co-Chair Dr. Mark Luther	University of South Florida		INTRODUCTION to Presentations of Technical Session V - Mining Trials, Technology and 'New' Ideas
34	9:00	Jon Machin	The Metals Company	UK	Recent experiences in the commissioning of a full scale pilot mining system in the CCZ
35	9:25	Orita Kiyotaka	JOGMEC	Japan	Experimental study of excavation efficiency of cobalt rich ferromanganese crusts on the Takuyo No.5 seamount
36	9:50	Alex Ran	JinAo Deep Sea Technology	USA	A Riser and Lifting System (RALS) concept for deep sea polymetallic nodule mining
37	10:15	Marcio Yamamoto	National Maritime Research Institute	Japan	Numerical analysis of dual-bore riser system for polymetallic nodules exploitation
	10:40	Coffee Break - 20 minutes			
38	11:00	Tyson Breedlove	ABS	USA	Ship to Ship transfer of polymetallic nodules in the deep and open oceans
39	11:25	Greg Baiden	Penguin Automated Systems	Canada	Selective mining of the seabed using telerobotic mining techniques
40	11:50	Jason Gillham	Impossible Mining	Canada	Economically viable selective harvesting of polymetallic nodules
41	12:15	Renee Grogan	Impossible Mining	Australia	Bioextraction as a method for processing polymetallic nodules - an economic and environmental gamechanger
	12:40	LUNCH Break- 1.2 hours			
42	14:00	Brian Mizell	OSI Minerals	USA	Deepsea minerals systems advancements: applying oil & gas technology to unlock deep sea minerals resources
43	14:25	Staale Monstad	Green Minerals AS	Norway	Taking the first industrial steps into the deep sea in Norway
44	14:50	John Parianos	Cook Islands Seabed Minerals Authority	Cook Islands	Diversity of marine minerals present in the Cook Islands
45	15:15	Hans Smit	Moana Minerals	USA / Cook Islands	By looking back into the past we have adapted our approach to environmental research moving forward
	15:40	Coffee Break - 20 minutes			
	16:00	Technical Chair Dr. Samantha Smith	Blue Globe Solutions		INTRODUCTION to Presentations of Technical Session VI - The Future of Environmental Monitoring and Mitigation
46	16:00	Kris De Bruyne	GSR	Belgium	COMPASS: GSR's Adaptive Management System for the responsible commercial-scale collection of polymetallic nodules
47	16:25	Steinar Ellefmo	Norwegian University of Science and Technology	Norway	Environmental monitoring in marine mineral resource management
48	16:50	Steven Rizea	Deep Reach Technology	USA	Progress on deep sea mining plume mitigation
	19:00	50th UMC BANQUET SPEAKER: Dr. Charles Morgan			
	22:00	End of the day			



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Thursday, October 6, 2022 - Discussion Session

EXPERT PANEL SESSION: Marine Minerals: Sorting Facts from Misconceptions	
9:00	
9:10	PANEL PANEL 1: Supply and Demand
10:10	PANEL PANEL 2: Environmental Knowledge and Protection
11:10	Coffee Break - 20 minutes
11:30	PANEL PANEL 3: Regulatory Framework
12:30	Lunch Break - 1.5 hours
14:00	PANEL Odyssey Marine Exploration Panel: Societal Benefits of Subsea Minerals: Phosphate
15:00	Networking and in-person Poster Presentations
16:00	End of the day

Friday, October 7, 2022 - Field trip

FIELD TRIP: TECHNICAL AND GEOLOGICAL TOUR	
8:30	
9:00	Stop STOP 1: St. Petersburg Maritime and Defense Technology Hub
11:30	Boxed Lunch (on the bus)
13:00	Stop STOP 2: Egmont Key State Park
16:30	End of the day



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