



16th DSBS

Deep-Sea Biology Symposium

Brest, 12-17 September 2021

Posters Session

Version 14th of September 2021

General & Special Sessions 1 Conservation topics and stewardship (natural/anthropogenic impacts, conservation, governance)

- Deep Sea Biology and the Ocean Decade in Europe
François H. LALLIER

Special session 1b# Spatial planning in the deep - lesson learned and new opportunities.pdf – Menini

- Coordinating Area-based Management Tools for an Integrated Governance of the Ocean Resources
Giovanni Ardito, Marzia Rovere
- From theory to practice development of a deep-sea ecosystem services framework
Giulia La Bianca, Kerry Howeel, Sian Rees, Martin Attrill, Kerry Sink, Mandy Lombard

Special Session 1c# Managing Deep-sea Ecosystems at Ocean Basin Scale.pdf – Morato & Roberts

- Random Forest Classification of Deep-Sea Habitats in the North Atlantic Basin using Predicted Species Assemblages as Proxies
Oisín Callery, Anthony Grehan
- Vertical walls as refuge areas for ancient black coral communities in the Azores
Marina Carreiro-Silva, Carlos Dominguez-Carrió, Timm Schoening, Eva Giacomello, Jorge Fontes, Kirsten Jakobsen, Joachim Jakobsen, Telmo Morato
- Long-lived New Zealand black corals as tools for paleoceanographic reconstructions to guide climate modelling in the Southwest Pacific
Ashley N. Davis, Daniel J. Sinclair, Dianne M. Tracey, Nicholas T. Hitt, Stewart J. Fallon, Erik Behrens
- Habitat suitability mapping of VME indicator taxa to inform deep-sea fisheries management in the Southern Indian Ocean
Berta Ramiro-Sánchez, Boris Leroy, Alexis Martin
- Prediction of Multi-Taxon Vulnerable Marine Ecosystems in the U.S. West Coast EEZ
Arvind Shantharam, Matthew Poti, Arliss Winship, Robert McGuinn, Thomas Hourigan
- Modelling tools to study deep-sea sponges connectivity in the Azores, using a particle tracking model, and a 3-dimensional biogeochemical model to better understanding deep-sea dynamics and ecosystem connectivity
Cláudia Viegas, Manuela Juliano, Ramiro Neves, Ana Colaço

Special session 1e# Pollutants and debris.pdf – Mestre

- First Report of Deep-Sea Litter from the Southwest Atlantic
Flávia Masumoto, Amanda Gomes, Rayane França, Marcelo Melo

- Plastic Ingestion by Pelagic and Benthic Crustaceans at the Charlie Gibbs Fracture Zone of the Mid-Atlantic Ridge
Daniella Milanese, Michael Vecchione, Tracy Sutton, Tamara Frank
- Occurrence of marine litter along abyssal areas of the Gloria Fracture Zone (NE Atlantic)
Sofia P. Ramalho, C. Ferreira, Christian Hensen, Pedro Terrinha, Mark Schmidt, Thomas Müller, Kasia Sroczyńska, Helena Adão
- Utilising seafloor imagery to assess marine macro-litter in The Canyons Marine Protected Area
Laura Robson, Liam Mearns, Emma Novak, Charlie Howarth, Kirsten Dinwoodie, Tom Tangye
- Long-term PAH bioaccumulation in deep-pelagic organisms after the Deepwater Horizon spill
Isabel C. Romero, Tracey Sutton, Heather Judkins, Michael Vecchione, April Cook, Marsh Youngbluth

Special session 1f# Climatic changes and deep-sea biodiversity.pdf – Yasuhara & Levin

- The morphological response of benthic foraminifera *Nuttallides umbonifer* and *Oridorsalis umbonatus* to deoxygenation in the deep oceans
Kyawt Aye, Daniela N Schmidt
- Ongoing and upcoming Cold-Water Coral Multi Stressor Experiments
Kelsey Archer Barnhill, Cristina Gutiérrez-Zárate, Marina Carreiro-Silva, J. Murray Roberts, Covadonga Orejas, Alfredo Veiga, Inês Martins, Maria Rakka, Juancho Movilla, Uwe Wolfram, Elisa F. Guallart, Marta Álvarez, Andrea Gori, Sebastian Hennige
- Suitable habitat and depth-driven climate refugia for *Lophelia pertusa* and faunal associates on the southeastern US margin
Ryan Gasbarro, Alex Margolin, Derek Sowers, Erik Cordes
- Crossing the Drake: Lessons from the brittle star *Astrotoma agassizii*
Candace Grimes, Kyle David, Andrew Mahon, Damien Waits, Ken Halanych
- In situ experimental evidence for responses of abyssal benthic biota to shifts in primary producers of the surface ocean linked to global climate change
Hidetaka Nomaki, Eugenio Rastelli, Nanako O Ogawa, Yohei Matsui, Masashi Tsuchiya, Elisabetta Manea, Cinzia Corinaldesi, Miho Hirai, Naohiko Ohkouchi, Roberto Danovaro, Takuro Nunoura, Teresa Amaro
- The ChEReef project: what threats on cold-water coral reefs in the Bay of Biscay, how to monitor and how to predict them?
Lénaïck Menot, **Julie Tourolle**, Karine Olu, Bertrand Moreau, Ricardo Silva Jacinto, Bruce Shillito, Franck Lartaud

Special session Deep Sea Mining 1g#: Deep-seabed mining - impacts, conservation, governance.pdf – Gollner & Haeckel + 1h#: Polymetallic Nodule Mining - Integrating scales, processes, impacts and knowledge.pdf – Baldrighi et al.

- Heavily disturbed seafloor shows recolonization by *Paleodictyon nodosum* within 26 years
Lilian Boehringer, Autun Purser, Yann Marcon, Antje Boetius
- Illuminating the “dark” abyssal biodiversity: Echinodermata
Magdalini Christodoulou, Tim O'Hara, Andrew F. Hugall, Christopher Mah, Andrey Gebruk, Rich Mooi, Marc P. Eleaume, Pedro Martinez Arbizu

- Biodiversity of Solenogastres (Mollusca Aplacophora) in the Clarion Clipperton Fracture Zone
M. Carmen Cobo, Kevin M. Kocot
- Observed behavioural response and recovery of a sponge to sedimentation
Jennifer M. Durden, Johanne Vad, Michael Clare, Andrew R. Gates
- Ophiotholia (Ophiuroidea): a little-known deep-sea genus present in polymetallic nodule fields
Angelina Eichsteller, Alexander Martynov, Magdalini Christodoulou, Tim O'Hara, Pedro Martínez Arbizu
- Restoration after polymetallic nodule mining-impact
Sabine Gollner, Matthias Haeckel, Felix Janssen, Nene Lefaible, Massimiliano Molari, Stavroula Papadopoulou, Gert-Jan Reichart, João Trabucho Alexandre, Annemiek Vink, Ann Vanreusel
- In situ oxygen flux baseline studies to quantify impacts of manganese nodule mining on benthic activity in the Clarion Clipperton Fracture Zone
Felix Janssen, Antje Boetius, Matthias Haeckel, Massimiliano Molari, Duygu Sevgi Sevilgen, Frank Wenzhöfer, Batuhan Cagri Yapan
- Protecting deep sea hydrothermal vent biodiversity through ABMTs
Lise Klunder, Sabine Gollner, Henko de Stigter, Erik Molenaar, Catherine Blanchard
- Insight for deep-sea mining ecotoxicology: Biomarker development based on comparative proteomics study on in situ copper exposed deep-sea amphipods
Yick Hang KWAN, Dongsheng ZHANG, Nélia C. MESTRE, Jin SUN, Peiyuan QIAN
- Testing the Seamount Refuge Hypothesis for Predators and Scavengers in the Western Clarion-Clipperton Zone
Astrid B. Leitner, Jeffrey C. Drazen, Craig R. Smith
- Differential impacts of sediment plumes generated by the extraction of seafloor massive sulfides and ferromanganese nodules on cold-water octocorals
Sandra Marques, Inês Martins, António Godinho, Mariana Cruz, Ana Colaço, Joana Raimundo, Miguel Caetano, Marina Carreiro-Silva
- Polymetallic nodule size and distribution of sessile megafauna in the eastern Clarion-Clipperton Zone
Alejandra Mejia, Simon-Lledó, Diva Amon, Katja Uhlenkott, Pedro Martínez Arbizu, Anemiek Vink, Daniel Jones
- Effects of copper in *Cancer bellianus*
Nélia C. Mestre, Manon Auguste, Andreia Carvalho, Antonio Godinho, Maria João Bebianno
- How could the exploitation of deep-sea polymetallic nodules potentially impact benthic microbial assemblages?
Massimiliano Molari, Batuhan Cagri Yapan, Julia Marén Otte, Felix Janssen, Frank Wenzhöfer, Matthias Haeckel, Antje Boetius
- Are we ready for deep-sea mining? State of the knowledge on ecosystems of the deep-sea mineral deposits after 20 years of exploration contracts
Tina Molodtsova, Diva Amon, Ana Colaço, Jeffrey Drazen, Livia Ermakova, Sabine Gollner, Lénaïck Menot, Craig Smith,
- Exploring the potential of metabarcoding as a reliable tool for monitoring meiobenthos in potential future deep-sea mining areas
Ellen Pape, Lara Macheriotou, Kenny Bogaert, Holly Bik, Taruna Schuelke, Annelien Rigaux, Ann Vanreusel
- Biodiversity, biogeography, and connectivity in the world's largest marine minerals exploration frontier
Eva CD Stewart, Guadalupe Bribiesca-Contreras, Thomas Dahlgren, Helena Wiklund, Sergi Taboada, Erik Simon-Lledo, Daniel O B Jones, Muriel Rabone, Craig R Smith, Adrian Glover
- Abundance, biodiversity and community structure of deep-sea benthic metazoan meiofauna in the polymetallic nodule fields of the Clarion-Clipperton Fracture Zone, eastern Pacific Ocean
Samantha Jia Wen Tong, Bin Qi Gan, Koh Siang Tan
- Application of scientific criteria for identifying hydrothermal ecosystems in need of protection
Sabine Gollner, Ana Colaço, Andrey Gebruk, Patrick Halpin, Nick Higgs, Elisabetta Menini, Nélia C. Mestre, Pei-Yuan Qian, Jozee Sarrazin, Kamil Szafranski, **Cindy Lee Van Dover**

- Spatial Diversity and Connectivity of Microbial Communities in Clarion-Clipperton Fracture Zone (Northesat Equatorail Pacific Ocean)
Batuhan Cagri-Yapan, Massimiliano Molrai, Julia Maren Otte, Felix Janssen, Frank Wenzhofer, Matthias Haeckel, Antje Boetius

General & Special Sessions 2 Biodiversity and ecosystem functioning from microbes to megafauna (biodiversity patterns, species distribution, function, food webs)

General session

- Complete mitogenomes of two black corals (Hexacorallia: Antipatharia: Antipathidae) from Rapa Nui (Easter Island)
Cynthia Asorey, Javier Sellanes, Daniel Wagner, Erin Easton
- The theory of Hydrothermal Vent biogeography
Otis Brunner, Chong Chen, Thomas Giguere, Shinsuke Kawagucci, Yuka Suzuki, Verena Tunnicliffe, Hiromi Watanabe, Satoshi Mitarai
- Coral Communities on the Corner Rise Seamounts
Harold Carlson, Rhian Waller, and all participants in the telepresence program for EX2104
- New deep-sea glass sponges (Porifera, Hexactinellida) of the tropical Atlantic seamounts
Celso Domingos, Daniel Kersken, Astrid Schuster, Katharine Hendry, Joana R. Xavier
- Salas y Gómez Ridge Benthic Habitat and Community Assessment of Seamounts and Oceanic Islands
Kara Eckley, Javier Sellanes, Dhugal Lindsay, Erin E. Easton
- Megafauna communities from abyssal sites along the Gloria Fracture Zone (NE Atlantic)
Teresa C. Ferreira, Christian Hensen, Pedro Terrinha, Mark Schmidt, Thomas Müller, Kasia Sroczyńska, Sofia P. Ramalho, Helena Adão
- Deep Forests – Assessing the relative vulnerability of South African potential VME indicator taxa
Mari-Lise Franken, Kerry Sink, Lara Atkinson, Natasha Karenyi
- Acquisition of symbiotic partners: modalities and consequences on establishment, distribution and ecology of vent species
Marion Guéganton, Lucile Durand, Johanne Aubé, Valérie Cueff-Gauchard, Marie-Anne Cambon-Bonavita, Florence Pradillon
- Effects of Energy Availability and Wood Type on Deep-Sea Wood Fall Community Assemblages in the Northern Gulf of Mexico
Granger Hanks, S. River D. Bryant, Craig R. McClain
- The Role of Cephalopods in the Azorean Pelagic Food Web
Nis Hansen, Miguel Guerreiro, Dr. Marco Scotti, Dr. Henk-Jan Hoving

- Abyssal megafauna communities respond at short time scales to changing food supply
Christine Huffard, Linda Kuhn, Larissa Lemon, Alana Sherman, Paul McGill, Rich Henthorn, Daniel Fabian, Victoria Assad, Ken Smith
- Estimating the community structure of deep-sea amphipods among seamounts
Eri Ikeuchi, Akira Iguchi, Hiroyuki Yokooka, Hideki Sugishima, Kazumasa Ikeda, Ryuichi Miwa, Miyuki Nishijima, Nozomu Iwasaki, Yuichiro Tanaka, Taiga Kunishima, Shogo Kato, Junpei Minatoya, Nobuyuki Okamoto, Atsushi Suzuki
- The impact of seafloor variance on biodiversity of deep-sea coral and sponge habitats
Yumna Ismail, Arline Camilo Hernandez, Kayla Cannon, Franchesca Gonzales, Ryan Bohlen, Joseph Cartwright, Xavier Delcid, Jack Donaldson, Austin Feasley, Lydia Fregosi, Gagan Kaur, Hannah Lehman, Hailey Niles, Jillian Quay, Nima Sherpa, Jimin Son, Jacob Stern, Maddie Tetreault, Skyler Virginia, Brett Woodworth, Mackenzie Gerring
- Molecular confirmation of the bolitaenin genera
Heather Judkins, Amanda Sosnowski, Michael Vecchione
- Can Whale-Fall Studies Inform Human Forensics?
Brett D. Jameson, Fiona Juniper, **S. Kim Juniper**, Craig R. Smith & Lynne S. Bell
- Species delimitation of Hexacorallia and Octocorallia around Iceland using nuclear and mitochondrial DNA and proteome fingerprinting
Severin Korfhage, Sven Rossel, Saskia Brix, Steinunn Hilma Ólafsdóttir, Pedro Martínez Arbizu
- The importance of chemosynthesis in the pelagic realm of Santos Basin, Southwestern Atlantic Ocean
Deborah S. Kutner, Flávia M. P. Saldanha-Corrêa, Mateus G. Chuqui, Pedro M. Tura, Daniel L. Moreira, Frederico P. Brandini, Camila N. Signori
- Determining Dietary Specialization in Siphonophores Using Remotely Operated Vehicle Data
Alex Lapidés
- The Influence of Steep Submarine Canyon Bathymetry on the Behavior and Distribution of the Deep Pelagic Community
Astrid Brigitta Leitner, Rob Sherlock, Kim Reisenbichler, Bruce Robison
- A Year in the Life of a Deep Sea Coral Community
Amanda Gannon, **Steven Y. Litvin**, Chris Lovera, Alana Sherman, Paul McGill, Dale Graves, Rich Henthorn, Aaron Schnittger, Jim Barry
- Biodiversity of mesopelagic fish community on the slope of the Bay of Biscay
Liz Loutrage, Jérôme Spitz, Anik Brind'Amour
- Mitogenomics of Vestimentifera: New Mitochondrial Genomes and Biogeographical Implications
Marina McCowin, Greg Rouse
- Does trophic specialization drive the remarkable diversity of deep pelagic dragonfishes?
Ryan McGonagle, Tracey Sutton
- Trophic ecology, diet and feeding behaviour of three bathyal sea anemones (Actiniaria: Cnidaria) in the Northwest Atlantic
Jiamin Sun, Jean-François Hamel, Violaine Shikon, Edison F. Cossignani, **Annie Mercier**
- Building up DeepIso - A global open database of stable isotope ratios and elemental contents for deep-sea ecosystems
Loïc N. Michel, James B. Bell, Stanislas F. Dubois, Gilles Lepoint, Karine Olu, William D. K. Reid, Jozée Sarrazin, Gauthier Schaal, Brian Hayden
- Amino acid stable isotope composition of sinking and suspended particles in the North Pacific reveals their importance for abyssal food web dynamics
Elizabeth Miller, Sonia Romero-Romero, Kenneth L. Smith, Christine L. Huffard, Brian N. Popp, Jeffrey C. Drazen

- Myctophid Ecology in the Gulf of Mexico: 2011 - 2017
Rosanna J. Milligan, Tracey Sutton
- Comparison of environmental DNA and imaging methods for monitoring deep-sea fishes on a seamount
Miyuki Nishijima, Akira Iguchi, Eri Ikeuchi, Hiroyuki Yokooka, Hideki Sugishima, Kazumasa Ikeda, Ryuichi Miwa, Yoshiro Sekido, Nozomu Iwasaki, Masahiro Suzumura, Ayumi Tsukasaki, Yuichiro Tanaka, Shogo Kato, Junpei Minatoya, Nobuyuki Okamoto, Taiga Kunishima, Yuji Ise, Atsushi Suzuki
- Observations of deep-sea cirrate octopods off southeast Brazil using a manned submersible
Jose Angel Alvarez Perez, Paulo Yukio Gomes Sumida, Yoshihiro Fujiwara, Richard Schwarz
- The effect of hydrography on the benthos of a submarine canyon: the study case of the South African Cape Canyon
Eleonora Puccinelli, Zoleka Filander, Tarron Lamont, Marcel van den Berg, Gavin Tutt, Laurene Snyders, Leon Jacobs, Mfundo Lombi
- Body size, vertical migration, and depth of occurrence explain variation in the stable isotope signatures of a diverse, low latitude micronekton assemblage
Travis M. Richards, Tracey T. Sutton, R.J. David Wells
- Modelling the distribution of the sea pen *Kophobelemnon stelliferum*
Jasmine Rix, Kerry Howell, Amelia Bridges, Kyran Graves
- Machine learning facilitates study of *Benthocodon pedunculata* population variability in the benthic boundary layer at Station M over > 30 years
Giovanna Sainz, Krish Mehta, Eric Orenstein, Christine Huffard, Kakani Katija, Ken Smith
- Biogeography of deep-sea octocoral communities in the North Atlantic
Emma Saso, Andrea M Quattrini, Steven R Auscavitch, Louise A Allcock, Erik E Cordes, Catherine S McFadden
- Deep-sea tardigrades of the North-Western Pacific: diversity, morphology and distribution
Anastasia Saulenko, Anastassya Maiorova, Vladimir Mordukhovich
- A faunal inventory of methane seeps on the Pacific margin of Costa Rica
Charlotte Seid, Avery Hatch, Marina McCowin, José Carvajal, Harim Cha, Shane Ahyong, Oliver Ashford, Odalisca Breedy, Douglas Eernisse, Shana Goffredi, Michel Hendrickx, Kevin Kocot, Christopher Mah, Allison Miller, Nicolás Mongiardino Koch, Rich Mooi, Tim O'Hara, Estefanía Rodríguez, Josefin Stiller, Ekin Tilic, Paul Valentich-Scott, Anders Warén, Mary Wicksten, Nerida Wilson, Erik Cordes, Lisa Levin, Jorge Cortés Nuñez, Greg Rouse
- Functional diversity patterns of deep-sea organic-fall benthic assemblages in an experiment along the SW Atlantic
Bruno H.M. Souza, Gilberto Bergamo, Joan M. Alfaro-Lucas, Mauricio Shimabukuro, Paulo Y.G. Sumida
- Deep seafloor imagery from the Weddell Sea document natural food falls and octopod diversity and distribution
Julian B. Stauffer, Richard Schwarz, Autun Purser, Laura Hehemann, Henk-Jan T. Hoving
- First ecological characterization of whip corals (*Hexacorallia: Antipatharia*) assemblages in the Easter Island Ecoregion, southeastern Pacific
Jan Tapia-Guerra, Cynthia Asorey, Erin Easton, Daniel Wagner, Matthias Gorny, Javier Sellanes
- Ecological niche modelling in three dimensions and ecomorphology of a widespread midwater Narcomedusan genus
Gerlien Verhaegen, Mehul Sangekar, Henk-Jan Hoving, Dhugal Lindsay
- Megafauna Assemblage on Mineral-rich Hardgrounds in the Southern California Borderland
Devin Vlach, Lisa Levin, Kira Mizell
- Ecosystem modeling in the oceanic zone: A Gulf of Mexico case study
Matthew S. Woodstock, Tracey T. Sutton, Tamara Frank, Yuying Zhang

- How does *Alvinella pompejana* acquire carbon from chemoautotrophic bacteria?
Magali Zbinden, Philippe Compère, Gilles Lepoint, Bruce Shillito, Loïc N. Michel
- Picoplankton spatial variation in Agulhas current mesoscale eddies of different ages
Cesar-Ribeiro, Caio; Piedras, F.R, da Cunha, L.C., Pinho, L.Q., Melo, D.L., Moser, G.A.O.

Special session Extra2a#

- Diversity of deep-sea scale-worms (Polynoidae) in the Clarion-Clipperton Fracture Zone
Paulo Bonifácio, Lénaïck Menot, Lenka Neal
- Arctic Megafaunal Assemblages of Disko Bay, West Greenland
Emmeline Broad, Diana Krawczyk, Martin Blicher, Nanette Hammeken, David Blockley, Chris Yesson
- Assessing Mesophotic and Deep Benthic Communities and Their Habitats For Restoration Following the Deepwater Horizon Oil Spill Using an Ecosystem-based Approach
Randy Clark, Stacey Harter, Amanda Demopoulos, Kris Benson
- First insights into biodiversity of deep-sea peracarids (Crustacea, Peracarida) from New Caledonia
Inmaculada Frutos, Laure Corbari, Magdalena Błażewicz
- Sexual dimorphism on deep-sea weaponry: the case of the Costa Rican yeti crab *Kiwa puravida* Thurber, W.J. Jones & Schnabel, 2011 (Decapoda: Anomura: Kiwaidae)
Juan Carlos Azofeifa-Solano, Olivia Pereira, Erik Cordes, Lisa Ann Levin, Shana Goffredi, **Jorge Cortés**
- Deep-sea Enteropneust Fauna of the Bering Sea
Olga V. Ezhova, Anastasiya I. Lukinykh, Elena M. Krylova, Sergey V. Galkin, Andrey V. Gebruk
- Distribution of *Pheronema carpenteri* (Porifera) in relation to oceanographic variability and other environmental drivers in the Porcupine Seabight, NE Atlantic
Kyran Graves, Amelia Bridges, Prof Kerry Howell
- Demosponges (Porifera) of abyssal nodule fields in the Clarion- Clipperton Zone
Swee-Cheng Lim, Koh-Siang Tan
- Amathillopsidae (Amphipoda, Crustacea) reveal new species and a clinging lifestyle in the deep sea worldwide
Anne-Nina Lörz, Tammy Horton, Rachael Peart
- The diversity of calcaxonian octocorals from the Irish margin
Declan Morrissey, Candice Untiedt, & Louise Allcock
- Advancing Habitat Suitability Models for Vulnerable Marine Ecosystem indicator taxa in the South Pacific: have we reached the limit for presence-only models?
Fabrice Stephenson, Ashley A. Rowden, Owen F. Anderson, C. Roland Pitcher, Matt H. Pinkerton, Grady Petersen, David A. Bowden
- An integrative analysis on the benthos of Astrid Ridge and Maud Rise, Southern Ocean
Anne Helene S. Tandberg, Luis Martell, Francisca Correia de Carvalho, Jon A. Kongsrud, Anne K. Sveistrup, Joan J. Soto Àngel, Tone Ulvatn, Aino Hosia

- Adding pieces to the puzzle: insights into diversity and distribution patterns of Cumacea (Crustacea: Peracarida) from the deep North Atlantic to the Arctic Ocean
Carolin Uhlir, Martin Schwentner, Kenneth Meland, Jon Anders Kongsrud, Henrik Glenner, Angelika Brandt, Ralf Thiel, Jörundur Svavarsson, Anne-Nina Loerz, Saskia Brix

Special session 2a#: Biodiversity and ecology of the deep-sea and polar benthos - Presentations in honour of Prof Craig R. Smith of the University of Hawaii.pdf – Sweetman et al.

- Range extensions for 9 species of Osedax boneworms
Gabriella H. Berman, B. Johnson, Greg W. Rouse
- Seascape Ecology of a Blake Ridge Cold Seep
Kellie Johnson, Avery Taylor, Annika Socha, Ellie Barksoumb, Cindy Lee Van Dover
- Deposit feeders are secondary consumers of detritus in an abyssal food web
Sonia Romero-Romero, Elizabeth C. Miller, Jesse A. Black, Brian N. Popp, Jeffrey C. Drazen

Special session 2b#: The deepest places on Earth - Bringing light in Hadal zones.pdf – Shimabukuro et al.

- Effect of high hydrostatic pressure on copepod carcass degradation
Belén Franco-Cisterna, John Paul Balmonte, Clemens Schauburger, Torkel G. Nielsen, Peter Stief, Ronnie N. Glud
- Coastal upwelling as a source of C and N for the deep ocean ecosystem in the southeast Pacific: evidence from isotopes analysis of zooplankton
Carolina E. González, Ruben Escribano
- Morphological and molecular evidence for a new isopod species at the abyssal and hadal transition
Stefanie Kaiser, Bente Stransky, Robert M. Jennings, Terue Cristina Kihara, Saskia Brix
- Comparative biogeography of benthic foraminiferal communities among western Pacific hadal trenches
Hiroshi Kitazato, H., Ohkawara, N., Gooday, A.J.
- A new species of Thermanemertes from Kairei hydrothermal vent field, Central Indian Ridge
Xu Liu, Chong Chen, Jin Sun, Shichun Sun

Special session 2c#: NW Pacific and Arctic biodiversity.pdf – Saeedi & Brandt

- Exploring the role of gelatinous zooplankton in Tomorrow's Arctic Ocean
Charlotte Havermans, Annkathrin Dischereit, Ayla Murray, Andrea Eschbach, Madlen Friedrich, Véronique Merten, Gerlien Verhaegen, Henk-Jan Hoving, Dmitrii Pantiukhin,

- Not so cosmopolitan: isolation and speciation in the midwater
Shannon B. Johnson, Jacob R. Winnikoff, Darrin T. Schultz, Lynne M. Christianson, Wyatt L. Patry, Claudia E. Mills, and Steven H.D. Haddock
- Methane seep communities on the Koryak slope of the Bering Sea
Elena Rybakova, Elena Krylova, Vladimir Mordukhovich, Sergey Galkin, Inna Alalykina, Igor Smirnov, Nadezhda Sanamyan, Georgy Vinogradov, Vladimir Shilov

Special session 2d#: Marine bioluminescence.pdf – Martini

- Etmopterus Lantern Sharks Use Coelenterazine as the Substrate for Their Luciferin-luciferase Bioluminescence System
Gaku Mizuno, Daichi Yano, José Paitio, Hiromitsu Endo, Yuichi Oba
- Identification of coelenterazine-type luciferases in bony fishes
Daichi Yano, José Paitio, Teerapong Seesamut, Gaku Mizuno, Hinano Imai, Manabu Bessho-Uehara, Masakazu Iwasaka, Yuichi Oba

Special session 2e#: Deep-sea microbial diversity and ecology - overview of micro eukaryotic and prokaryotic biota.pdf – Velez

- Health screening of the reef forming scleractinian cold-water corals *Lophelia pertusa* and *Madrepora oculata* in a remote submarine canyon on the European continental margin, NE Atlantic
Appah J. K. M., Lynch, S. A., Lim, A., O' Riordan R., O'Reilly L., de Oliveira L., Wheeler A. J.,
- The fungal niche at deep-sea methane seeps: Distribution of fungi and Actinobacteria across the Cascadia Margin
Lila Ardor Bellucci, Susie Cummings, Sarah Seabrook, Kerry McPhail, Amanda Demopoulos, Tamara Baumberger, Nicole Raineault, Andrew Thurber
- Microbial functional diversity at methane seeps of the Cascadia Margin
Susie Cummings, Sarah Seabrook, Lila Ardor Bellucci, Kerry McPhail, Tamara Baumberger, Amanda Demopoulos, Andrew R Thurber,
- Spatial and temporal dynamics of microbial communities in active hydrothermal chimneys
David X. François, Erwan G. Roussel, Françoise Lesongeur, Ewan Peller, Sandrine Cheron, Xavier Philippon, **Anne Godfroy**
- Fungal diversity in a minimum oxygen zone of the Tropical Pacific Ocean revealed by Illumina sequencing
Judith Posadas, Patricia Velez, Silvia Pajares, Laura Espinosa, Jaime Gasca
- *Persephonella atlantica* sp nov.: How to adapt to physico-chemical gradients in high temperature hydrothermal habitats
David X. François, Anne Godfroy, Clémentine Mathien, Johanne Aubé, Cécile Cathalot, Françoise Lesongeur, Stéphane L'Haridon, Xavier Philippon, **Erwan G. Roussel**
- Hydrothermal vent fields in the southern Gulf of California as fungal hotspots
Patricia Velez, Diana L. Salcedo, Laura Espinosa-Asuar, Jaime Gasca-Pineda, Abril Hernandez-Monroy, Luis A. Soto

Special session 2f#: Biology of deep-sea microorganisms.pdf – Cario et al.

- Study of marine iron-rich microbial mats from Lucky Strike: influence of environmental variations
Aina Astorch Cardona, Mathilde Guerre, Valérie Chavagnac, Céline Rommevaux
- Deep sea microbial community: diversity and activities under in situ condition
Marc Garel, Christian Tamburini
- High-pressure transparent micro and millifluidics reactors: new tools for investigating the deep-sea biosphere at lab scale:
A. Cario, E. Vidal, C. Lecoutre, O. Nguyen, **S. Marre**
- New microbial colonizer sampling the physico-chemical gradient: first results
Céline Rommevaux, Valérie CHAVAGNAC, Alain CASTILLO, Pascal GISQUET
- Microbial Strategies for Survival in the Glass Sponge *Vazella pourtalesii*
Kristina Bayer, Kathrin Busch, Ellen Kenchington, Lindsay Beazley, Sören Franzenburg, Jan Michels, Ute Hentschel, **Beate Slaby**
- Combined high-pressure technologies for studying and isolating methanogen strains at lab scale without decompression
Emeline Vidal, Karyn L. Rogers, Anaïs Cario, Carole Lecoutre, Olivier Nguyen, Anthony Ranchou-Peyruse, Samuel Marre
- Metagenomic analysis revealed a wide distribution of phototrophic bacteria in hydrothermal vent on the ultraslow-spreading Southwest Indian Ridge
Long-Fei Wu, Hong Chen, Denghui Li, Aijun Jiang, Jianwei Chen, Xue-Gong Li, Wei-Jia Zhang, Shanshan Liu

General Session 3 Life-history traits and population connectivity (reproductive ecology, larval development and dispersal, and population connectivity)

- *Goniocorella dumosa* are brooders! Opportunistic observations of larval behaviour, settlement, and corallite development of a New Zealand deep-sea stony coral
Jenny Beaumont, Di Tracey, Graeme Moss, Vonda Cummings, Malcolm Clark, Rhian Waller
- Does larval food availability explain the retention of seasonal breeding in bathyal echinoids? An experimental test of Crisp's Rule
Avery Calhoun, Lauren Rice, Caitlin Plowman, Matt DePaolis, Carmen Reddick, Larry Basch, Craig M. Young
- First insights on the reproductive traits of the vent crab *Segonzacia mesatlantica* (Guinot, 1989) from the Mid-Atlantic Ridge
Mariana Cruz, Nadine Le Bris, Ana Colaço,
- Evaluating the use of polyp counts to assess size structure trends of a sea pen (Cnidaria: Pennatulacea) from in situ imagery
Bárbara de Moura Neves, Peter Lawton

- A 16,000 km connection under the sea? Tracing the spread and adaptation of a deep-sea weed: the chemosymbiotic siboglinid *Sclerolinum contortum*
Magdalena Georgieva, Ana Riesgo, Sergio Taboada, Nathan Kenny, Mari Eilertsen, Hans Tore Rapp, Maria Belen Arias, Nadezda Rimskaya-Korsakova, Adrian Glover
- Diversity of western pacific back-arc basins invertebrates reevaluated through a barcode approach – Results on decapods and polychaetes
Ambre Chabert, Valérie Cueff-Gauchard, Marie-Anne Cambon, **Stéphane Hourdez**
- Comparative reproductive biology of deep-sea ophiuroids inhabiting polymetallic-nodule fields in the Clarion-Clipperton Fracture Zone
Sven R Laming, Magdalini Christodoulou, Pedro Martinez Arbizu, Ana Hilário
- Development of a shipboard high-pressure plankton observatory (HIPPO) for investigating swimming behaviors of deep-sea larvae
Lauren Mullineaux, Stéphane Hourdez, Helen Fredricks, Susan Mills, Lauren Dykman, Michelle DiBenedetto, Shawn Arellano, Ahna Van Gaest, Caitlin Plowman
- Did the experimental seafloor disturbance affect deep-sea nematode biological traits patterns? An example from the Clarion Clipperton Fracture Zone (CCFZ) (subequatorial NE Pacific)
Teresa Radziejewska, Valentina Galtsova, Joanna Rokicka-Praxmayer, Kamila Mianowicz
- Comparisons of Reproductive Output and Isotopic Signatures in a Facultative Hyper-epibiotic Polychaete from Methane Seeps in the Gulf of Mexico
Lauren N. Rice, Oregon Institute of Marine Biology, University of Oregon (United States), lnr@uoregon.edu Craig M. Young
- Bioenergetic modelling of a deep-sea bivalve, *Christineconcha regab*
Marine Vandenberghe, Sylvie Marylène Gaudron, Gonçalo Montairo Marques, Ann Andersen, Karine Olu, Carole Decker, Sébastien Duperron
- Biogeography of deep-sea hydrothermal vent copepods on the Izu Bonin Arc, northwestern Pacific
Hiromi Kayama WATANABE, Daisuke UYENO, Kento KAWATANI, Tomo KITAHASHI, Hidetaka NOMAKI, Chong CHEN, Motohiro SHIMANAGA
- Divergence population genetics of bacterial symbionts of hydrothermal vent mussels
Sook-Jin Jang, Yujin Chung, **Yong-Jin Won**

General & Special Sessions 4 Adaptations of deep-sea organisms (from molecules to organisms: how life adapt to extreme conditions)

General session

- A second scaly snail: Hard dermal sclerites of the vent gastropod *Ifremeria nautilei*
Chong CHEN, Satoshi OKADA, Hiromi Kayama WATANABE, Katsuyuki UEMATSU, Noriyuki ISOBE
- Anatomical studies of Desmosomatidae (Isopoda) using X-ray microtomography reveal functional adaptations to abyssal environments
Patricia Esquete, Marina R. Cunha
- Glutamate optimizes enzymatic activity under high hydrostatic pressure in *Desulfovibrio* species: effects on the ubiquitous thioredoxin system
Hélène Gaussier, Matthieu Nouailler, Marc Garel, Christian Tamburini, Alain Dolla, Nathalie Pradel

- Relationship status – it's complicated: Vent fluid chemistries constrain host-endosymbiont dynamics in *Alviniconcha hessleri*
Nova B. Hanson, Suzanne C. Dufour, Amanda E. Bates
- Rainbow bodies: revisiting the diversity of coelomocytes and aggregates across subtidal and deep-sea echinoderms
Sara Jobson, Jean-François Hamel, Annie Mercier
- Exploring Chemical Peptide Diversity from the mucus of the Deep Sea Scavenger *Parborlasia corrugatus*
Quentin Laborde, Erik Jacobsson, Håkan Andersson, Ulf Göransson
- Hemoglobins are a keystone adaptation for deep-sea hydrothermal vent scaleworms
Victor Le Layec, Stéphane Hourdez
- Genomic adaptations of cold-water corals to low calcium carbonate saturation
Michelle L. Neitzey, Kate R. Castellano, Timothy M. Shank, Rachel J. O'Neill
- How do hydrothermal vent shrimp cope with extreme temperature fluctuations?
Juliette Ravaux, Nelly Léger, Gérard Hamel, Bruce Shillito
- Removal mechanisms of embedded ribonucleotides in DNA from deep-sea archaeal microorganisms
Maurane Reveil, Lucie Chapel, Blandine Vourc'h, Pierre Raia, Ludovic Sauguet, Yann Moalic, Mohamed Jebbar, Ghislaine Henneke
- Lipidome variations of deep-sea vent shrimps acclimated to atmospheric pressure: A homeoviscous response?
Bruce Shillito, Céline Desurmont, Dominique Barthélémy, Dominique Farabos, Gaëtan Després, Juliette Ravaux, Magali Zbinden, Antonin Lamazière
- Brain morphology and sensory specialisations in lanternfishes
Jasper Stead, Kara Yopak, Justin Marshall, Fanny de Busserolles
- Morphological investigations into the calceoli of selected Amphipoda (Crustacea)
Roxana Timm, Alexandra Kerbl, Anne-Nina Lörz

Special session 4a#: Vision in the deep ocean.pdf – Stenvers

- The rod-like cone retina of mesopelagic fish larvae suggests a new visual developmental pathway in vertebrates
Lily Fogg, Fabio Cortesi, Stamatina Isari, Justin Marshall, Fanny de Busserolles
- Visual gene expression reveals a cone to rod developmental progression in deep-sea fishes
Nik Lupše, Fabio Cortesi, Marko Freese, Lasse Marohn, Jan-Dag Pohlmann, Klaus Wysujack, Reinhold Hanel, Zuzana Musilova
- One species, two habitats: *Shinkaia crosnieri* inhabits in both hydrothermal vents and cold seeps in the Pacific Ocean
Yao XIAO, Ting Xu, Jin Sun, Yan Wang, Wai Chuen Wong, Yick Hang Kwan, Chong Chen, Jian-Wen Qiu and Pei-Yuan Qian

General & Special Sessions 5 Access to the deep sea (technological and methodological advances to access and investigate deep-sea life, including observatories and cutting edge technologies –e.g. A.I. and omics)

General session

- Evolution of pressurized devices for deep-sea fauna study
Louis Amand, Magali Zbinden, Juliette Ravaux, Nelly Léger, Bruce Shillito
- Exploration of Deepwater Seamount-Associated Chondrichthyans of the Southern Indian Ocean Using Genetic barcoding, eDNA, and Deepwater Cameras
Paul J Clerkin and Jan R McDowell
- FISH, a new tool to fix in situ motile fauna in deep-sea environments for symbiosis studies
Cueff-Gauchard Valérie, AUBE Johanne, LAGADEC Jean-Romain, BIGNON Laurent, IFREMER, LAFONTAINE Jean-Pierre, HERNANDEZ-AVILA Ivan, SHILLITO Bruce, AMAND Louis, ROUSSEL Erwan, CAMBON Marie-Anne
- A target-enrichment bait set for assessing environmental change in deep-water octocorals
Sriram Ramamurthy, Ariane Buckenmeyer, **Danielle M. DeLeo**, Andrea M. Quattrini
- Improving biodiversity inventories of the deep sea using Capture by Hybridisation
Babett Günther, Sophie Marre, Pierre Peyret, Sophie Arnaud-Haond
- A biological approach on CTD data along with EBS tracks to assign water masses to marine benthic species distribution data
Vivien Hartmann, Saskia Brix, Simon Tewes, Maik Wilsenack, Mia Schumacher
- Video Analysis: a valuable tool to gather data about deep-sea associations?
Alexa Parimbelli, Charlie Keeney, Joana R. Xavier, Louise Allcock, Claire Laguionie Marchais

Special session 5a#: Deep-sea ecosystem dynamics - long-term observations and evolving approaches.pdf – *Matabos et al*

- Stories Told by Animals and Argo-floats: Long-Term Observations of Offshore Currents
Cherisse Du Preez, Tetjana Ross, Debby Ianson
- BathyBot – a deep-sea crawler to see the unseen in the NW Mediterranean Sea
Séverine Martini, Christian Tamburini, Carl Gojak, Jacopo Aguzzi, Aurélien Arnaubec, Laury Barnes-Davin, Karim Bernardet, Olivier Bocquet, Bruno Bombled, Vincent Bertin, Pierre Chevaldonné, Paschal Coyle, Viorel Ciausiu, Elodie Rouanet, Christian Grenz, Zouhir Hafidi, Patrick Lamare, Céline Laus, Dominique Lefèvre, Nadine

Lebris, Karim Mahiouz, Simone Marini, Marjolaine Matabos, Cécile Militon, David Nerini, Thierry Perez, Marc Picheral, Romain Piasco, Christophe Rabouille, Jozée Sarrazin, Delphine Thibault, Laurenz Thomsen

- A Strategy to Map, Explore, and Characterize the U.S. EEZ.
Mark Mueller, Amanda Demopoulos, Stacy Aguilera-Peterson, Chrissy Hayes, Lucila Houttuijn Bloemendaal, Max Showalter, Caitlin Adams
- Insight into the Ecology and Hydrography of Mesopelagic Monterey Bay through MBARI's Midwater Time Series
Rob E Sherlock, Kim R Reisenbichler, Astrid B Leitner, Monique Messié, Bruce H Robison

Special session 5b#: The use of the A.I. for biodiversity studies in the deep sea.pdf – *Zeppilli et al.*

- 2D convolutional neural networks for benthic fauna identification
Khawla Ben Gaied, Abdesslam Benzinou, Abdul Qayyum, Kamal Nasreddine, Catherine Borremans, Valentin Foulon, Terue Kihara, Pedro Martinez Arbizu, Daniela Zeppilli
- Fish Species Recognition in Unconstrained Underwater Environment Using Convolutional Neural Networks
Bentamou Abdelouahid, BENZINOU Abdesslam, NASREDDINE Kamal
- Biodiversity underestimation in our bLUe planEt: artificial intelligence (AI) REVOLUTION in benthic taxonomy (BLUEREVOLUTION)
Catherine Borremans, Daniela Zeppilli, Abdesslam Benzinou, Kamal Nasreddine, Valentin Foulon
- FathomNet: An open underwater image database for training
AI Kakani Katija, Brian Schlining, Lonny Lundsten, Kevin Barnard, Giovanna Sainz, Eric Orenstein, Oceane Boulais, Benjamin Woodward, Katy Croff Bell
- Deep Learning and Deep Arctic Jellies: a case study pipelining real-time ROV video annotations, post-cruise analysis, data dissemination and production of machine-learning training sets
Dhugal Lindsay, Mitsuko Hidaka, Mehul Sangekar, Takashi Hosono, Daisuke Matsuoka, Daisuke Sugiyama, Ariell Friedman, Russell Hopcroft
- Seafloor classification with optimized texture convolutional neural network: application to complex benthic habitats on seamount and volcanic island slopes
Thibault Napoléon, Melissa HANAFI-PORTIER, Clémence CARCOPINO, Camille DUGARD, Simon GOURDON, Catherine BORREMANS, Karine OLU