



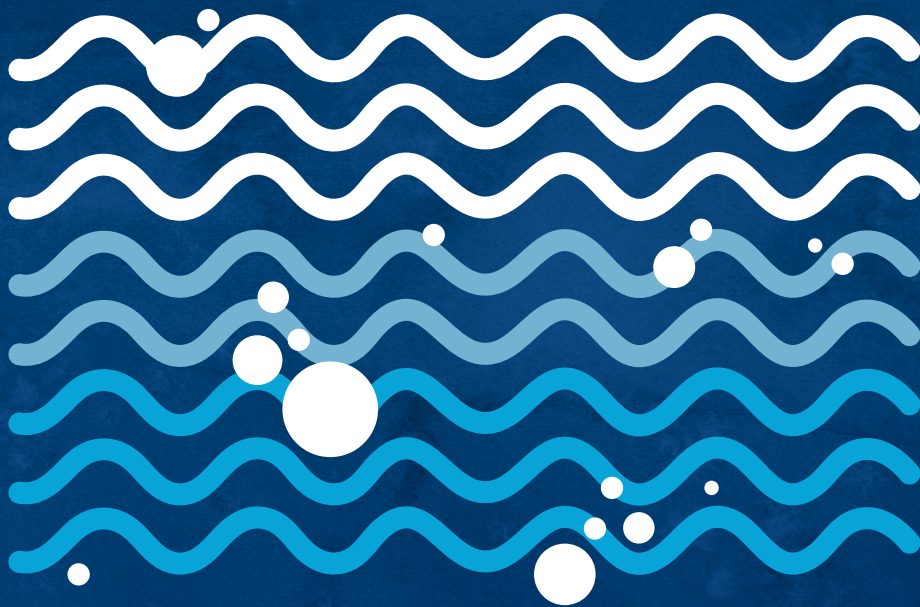
GIMS¹⁵

23-27
OCTOBER
2023

**GAS IN MARINE
SEDIMENTS
CONFERENCE**

CÁDIZ
Spain

PROGRAMME



CONFERENCE SCHEDULE



	Monday Oct. 23	Tuesday Oct. 24	Wednesday Oct. 25	Thursday Oct. 26	Friday Oct. 27
a.m.		Registration Opening Opening talk Keynote speaker 1 Oral Session 1	Keynote speaker 2 Oral Session 3	Keynote speaker 3 Oral Session 6	GIMS15' Field trip
p.m.		Oral Session 2 Poster Session 1	Oral Session 4 Oral Session 5 Poster Session 2	GIMS General Assembly Closing Session	
	Ice breaker Welcome	Cadiz city tour		Meeting dinner	

Organized by

SCIENTIFIC THEMATIC SESSIONS



Opening talk:

The importance of seabed gas emissions in the Gulf of Cadiz: a review of 25 years of international research cooperation.

Master talk 1:

Detection and quantification of marine gas emissions into the hydrosphere and atmosphere - Distribution, variability and controlling factors.

Master talk 2:

Active mud volcanoes associated with brines on the Nile deep-sea fan.

Master talk 3:

Hydrocarbon Seeps in Southern Gulf of Mexico, examples from the Campeche-Sigsbee Salt Province

Thematic Session 1:

The Upward Path of gas: from the Subsurface to the Atmosphere through the Ocean.

Thematic Session 2:

The Role and Diversity of Chemosynthetic Organisms at Gas Seeps.

Thematic Session 3:

Active Mud Volcanoes: Structure, Plumbing, Chemistry and Triggering-Mechanisms.

Thematic Session 4:

Active seafloor gas emissions, gas reservoirs and tectonics around the world.

Thematic Session 5:

The Complex Interplay of Gas Emissions in Marine Sedimentary Basins in Polar Regions, Arctic and Antarctica.

Thematic Session 6:

Seafloor Gas Hydrates in the Oceans.

MONDAY 23TH OCTOBER

19:00 - 20:30 H

Welcome and Ice breaker
Parador Atlantico of Cadiz
Av. Duque de Nájera, 9, 11002 Cádiz



GPS
coordinates

TUESDAY 24TH OCTOBER

8:45 - 9:15 H

Registration

9:30 - 10:00 H

Opening sessions:

Prof. Darío Bernal Casasola. General Coordinator of the International Campus of Excellence in Marine Sciences. CEIMAR.

Mr. Luis Somoza. Geological Survey of Spanish National Research Council. IGME-CSIC.

10:00 - 10:40 H

Opening talk:

The importance of seabed gas emissions in the Gulf of Cadiz: a review of 25 years of international research cooperation.

Mr. Luis Somoza. Spanish Institute of Geology and Mining. IGME-CSIC.

Mrs. María del Carmen Fernández-Puga. Geoscience Dpt. University of Cadiz.

10:40 - 11:10 H

Coffee Break.

11:10 - 11:50 H

Master talk 1

Detection and quantification of marine gas emissions into the hydrosphere and atmosphere - Distribution, variability and controlling factors.

Keynote speaker:

Dr. Miriam Römer. MARUM. Center for Marine Environmental Sciences. University of Bremen, Germany.

11:50 - 14:25 H

Thematic Session 1

The upward path of gas: from the Subsurface to the Atmosphere through the Ocean

Conveners:

Ian R. MacDonald. Florida State University. USA.

Ewa Burwicz-Galerne. MARUM. Center for Marine Environmental Sciences. University of Bremen.

11:50 - 12:10 H **Fate of methane in the water.** MacDonald, I, Silva, M, O'Reilly.

12:10 - 12:30 H **Competitive methane bubble growth in aquatic muds.**
Zhou, X., Katsman, R.

12:30 -13:45 H **Group photo and Lunch.**

13:45 – 14:05 H **A novel method for calculation of methane flux at cold seep area based on long-term in-situ observation data.** Du, Z. F, Wang, B., Luan, Z. D., Xing, L., Lian, C., Wang, L. F., Xi, S. C., Li, L. F., Cao, L., Zhang, X.

14:05– 14:25 H **Estimation of gas bubble size in sediment of Lake Kinneret using bottom reflection of wideband sound signals.** Katsnelson B., Uzhan-sky E, Lunkov A., Katsman R. (Video recorded)

14:30-15:30 H **Thematic Session 2**

The Role and Diversity of Chemosynthetic Organisms at Gas Seeps.

Conveners:

María de la Fuente. Bruxelles University.

Blanca Rincón-Tomás. Geological Survey of Spanish National Research Council. IGME-CSIC.

14:30 – 14:50 H **Examining the efficiency of the anaerobic oxidation of methane (AOM) biofilter in gassy sediments.** de La Fuente, M., Arndt, S., Marín-Moreno, H., Minshull T. A. and Vaunat, J.

14:50 – 15:10 H **Microbial biomineralization processes related to seabed fluid emissions: hydrocarbon cold seeps vs. volcanic-hydrothermal vents.** Rincón-Tomás, B., González, F.J., Somoza, L., Medialdea, T., Lobato, A., Santofimia, E.

15:10 – 15:30 H **Biogeochemical processes affecting the distribution of chemosynthetic communities at a cold-water coral site off the Vesterålen coast, northern Norway.** Argentino, C, Akinselure, A, Fallati, L, Savini, A, Ferré, B., Panieri, G.

15:30 - 17:30 H **Coffee break & Posters Session 1**

Conveners:

Zengfeng Du. Institute of Oceanology, Chinese Academy of Sciences.

Marianne Nuzzo. IGI Integrated Geochemical Interpretation Ltd, United Kingdom.

Posters short presentations:

- 16:00 – 16:05 H** **PS1. Methane gas dynamics in sediments of lake Kinneret, Israel, and its limnological controls: insights from a multi-annual acoustic investigation and correlation analysis.**
Katsman, R., Uzhansky, E., Lunkov, A., Katsnelson, B.
- 16:05 – 16:10 H** **PS1. Sediment-water fluxes of CH₄ and N₂O along the Guadalquivir estuary (Gulf of Cádiz).**
Sánchez-Rodríguez, J., Sierra, A., Fernández-Puga, M.C., Ponce, R., Forja, J., Ortega, T.
- 16:10 – 16:15 H** **PS4. Geophysical evidence for a newly discovered mud volcano field in the northern Moroccan continental slope, south Alboran Sea.**
Menapace, W., Perea, H. & STRENGTH cruise participants.
- 16:15 – 16:20 H** **PS4. EMODnet geology: fluid emission database of the European seas.**
Medialdea, T., Fiorentino, A., Battaglini, L., Somoza, L., Lobato, A. González, F.J.
- 16:20 – 17:30H** **Posters Discussion.**

18:00 - 19:30 H Social Event

Cadiz city tour.

Duration: 18:00 – 19:30 pm.

Meeting point and hour: Main hall of the Parador Atlántico at 17:45 pm.

Description: The group will move towards Plaza San Juan de Dios where the guide will be waiting for you and the city tour will start with the following **itinerary:** Barrio del Pópulo, plaza de la Catedral, c/ Compañía, Plaza de las flores, C/Ancha, plaza de San Antonio where the Casino of Cadiz is located, Plaza Mina where we can find the museum of Cadiz until reaching Plaza de España where we can see the monument to the Cortes of 1812.

WEDNESDAY 25TH OCTOBER

9:00 - 9:40 H Master talk 2:

Active mud volcanoes associated with brines on the Nile deep-sea fan.

Keynote speaker:

Dr. Stéphanie Dupre. IFREMER, National Institute for Ocean Science, France.

9:40 - 12:20 H

Thematic Session 3:

Active Mud Volcanoes: Structure, Plumbing, Chemistry and Triggering-Mechanisms.

Conveners

Catherine Pierre. LOCEAN- Sorbonne Université, France.

Claudio Argentino. UiT The Arctic University of Norway.

9:40 – 10:00 H

Regional geology around a thermogenic gas discovery offshore Morocco (Gharb basin). *Giraldo C.*

10:00 – 10:20 H

Mud volcanism, fluid flow and seismicity: results from recent expeditions in the Gulf of Cadiz. *Menapace, W.; Xu, S.; González-Lan-chas, A.; Asioli, A.; Urgeles, R.; Perea, H.; Kopf, A.*

10:20 – 10:40 H

Mud volcanoes along the Gibraltar Arc: episodic tectonic control of the Eurasia-Africa plates. *Somoza, L. and Medialdea. T.*

10:40 – 11:10 H

Coffee Break.

11:10 – 11:30 H

Active mud volcanoes in Sicily: isotopic composition of fluids and of authigenic carbonates. *Pierre, C., Rouchy, J.M., Blanc-Valleron, M-M., Caruso, A.*

11:30 – 11:50 H

Recent activity and evolutionary reconstruction of Sartori mud volcano in the Calabrian Arc, Mediterranean Sea. *Doll, M., Römer, M., Pape, T., Klügel, A., Kaul, N., Kölling, M., Bohrmann, G.*

11:50 – 12:10 H

Nitrogen uptake by methane-oxidizing consortia in gas hydrate-bearing sediments at Håkon Mosby mud volcano, SW Barents Sea. *Argentino, C, Wittig, C., Peckmann, J., Panieri, G.*

12:20 – 13:30 H

Lunch.

13:30-14:30 H

Thematic Session 4

Active seafloor gas emissions, gas reservoirs and tectonics around the world.

Conveners:

Ewa Burwicz-Galerne. MARUM. Center for Marine Environmental Sciences, University of Bremen, Germany.

Alexev Portnov. University of Texas Institute for Geophysics.

13:30 – 13:50 H

Interaction of sub-seafloor gas reservoir drainage, the Messinian salt, and the resilience of deep-water ecosystems. *Meilijson, A., Reznik, I. J., Rosenberg, Y. O., Pape, T., Bohrmann, G., Bialik, M. O., Kanari, M., Giladi, A., Herut, B., Rubin-Blum, M., Makovsky, Y.*

13:50 – 14:10 H **Yam seep area at four-way closure ridge, Taiwan - a typical seep associated with an accretionary ridge.** Bohrmann, G., Tseng, Y, Smrzka, D., Lin, S., Berndt, C., Römer, M., Pape, T., Schröder-Ritzrau, A., Frank, N.

14:10 – 14:30 H **Gas emission systems, BSRs and active tectonics in the NW Peru basins.** Ng-Cutipa, W.L., Ramos, A., Cerpa, L., Pieren, Medialdea T., Somoza L.

14:30-16:00 H **Thematic Session 5:**

The Complex Interplay of Gas Emissions in Marine Sedimentary Basins in Polar Regions, Arctic and Antarctica.

Conveners

Karim Andreasen. UiT - The Arctic University of Norway.

Hector Marín. Southampton University, United Kingdom.

14:30 – 14:50 H **Interaction between methane and ice in an Arctic sedimentary petroleum basin.**

Andreassen, K., Winsborrow, M., Patton, H., Serov, P., Mattingdsdal, R.

14:50 – 15:10 H **The complex gas emission systems in Svalbard fjords.**

Römer, M, Rodes, N., Betlem, P., Senger, K., Noormets, R., Marcon, Y., Pape, T., Bohrmann, G.

15:10– 15:30 H **Geochemical characterization of gas release source from a volcanic sedimentary basin (Fumarole Bay, Deception Island, Antarctica).**

Santofimia E., Asensio-Ramos M., Amonte C., Rincón-Tomás B., González F.J., Lobato A., Ng Cutipa W.L., Cervel S., Medialdea T., Marino E., Pérez N.M., Somoza L., EXPLOSEA Team.

15:30 - 17:00 H **Coffee break & Posters Session 2**

Conveners:

Thomas Pape. MARUM. Center for Marine Environmental Sciences and Faculty of Geosciences, University of Bremen.

Esther Santofimia. Marine Geology research group, Geological Survey of Spain, IGME-CSIC.

Posters short presentations:

15:30 – 15:35 H **PS3. The Mediterranean ridge 25 years after the ODP160 expedition: new discoveries on mud volcanism and future research trajectories.**

Menapace, W. and Kopf, A.

15:35 - 15:40 H **PS4. Diagenetic carbonates related to hydrocarbon-rich seepage in the Romanian sector of the Black Sea (GHASS 2 oceanographic cruise).**

Gontharet, S., Ricard, C., Caqueneau, S., Demange, J., Pierre, C., Dupré, S., Riboulot, V.

- 15:40 - 15:45 H** **PS4. Atlas of active seabed fluid emissions along the Spanish continental margin.**
Lobato, A., Medialdea, T., Somoza, L., González, F.J., Marino, E.
- 15:45 - 15:50 H** **PS6. Diagenesis and authigenesis of magnetic minerals in marine gas hydrate systems from the Bay of Bengal.**
Virsen, G. and Firoz, B.
- 16:00 - 17:00 H** **Poster Discussion.**

THURSDAY 26TH OCTOBER

9:00 - 9:40 H Master talk 3:

Hydrocarbon Seeps in Southern Gulf of Mexico, examples from the Campeche-Sigsbee Salt Province.

Keynote speaker:

Dr. Gerard Borhman. MARUM and Department of Geosciences, University of Bremen, Germany.

9:40 - 13:50 H Thematic Session 6:

Seafloor Gas Hydrates in the Oceans.

Conveners

Firoz Badesab. CSIR. National Institute of Oceanography, Goa, India.

María del Carmen Fernández-Puga. Geoscience Dpt. University of Cadiz.

9:40 – 10:00 H **A hydrate ridge within widespread methane seeps, offshore Romania (Black Sea).** Dupré, S., Agnissan, C., Akhmanov, G., Bellon, C., Brandily, C., Caquineau, S., Donval, J.-P., Fandino Torres, O., Gontharet, S., Grilli, R., Ker, S., Le Gonidec, Y., Ogor A., Peyronnet, C., Pierre, C., Poort, J., Ricard C., Ruffine, L., Sultan, N., Théréau, E., Thomas Y., Riboulot, V.

10:00 – 10:20 H **GEOHYDRATE project results and a new paradigm in gas hydrate research – scientific basis of the Bulgarian gas hydrate program.** Vasilev, A, Kvamme, B., Botusharov, N., Genov, I., Pehlivanova, R., Petsinski, P.

10:20 - 10:40 H **Anomalously deep gas hydrate stability zone in rapidly formed sedimentary basins.** Portnov, A., Flemings, P., Meazell, K., Hudec, M., Dunlap, D.

10:40 – 11:10 H **Coffee Break.**

11:10 - 11:30 H **Spontaneous free methane gas migration in marine sediments at high latitudes.** Burwicz-Galerie, E., Gupta S. and Rüpke, L.

11:30 - 11:50 H Constraints on the anthogenesis of magnetite and granite in the cold seep sediments from the Bay of Bengal. [Firoz, B.](#) and [Virsen, G.](#)

11:50 - 12:10 H Gas hydrates and lithologies affect the composition of gases migrating through sediments drilled off SW Taiwan. [Pape, T.](#), [Tu, T.H.](#), [Lin, S.](#), [Berndt, C.](#), [Wallmann, K.](#), [Tseng, Y.](#), [Bohrmann G.](#)

12:10 - 12:30 H Gas hydrate deposits in the northern Bay of Bengal, offshore Bangladesh. [Monteleone, V.](#), [Marín-Moreno, H.](#), [Bayrakci, G.](#), [Best, A.](#), [Shaon, F.](#), [Hossain, M.M.](#), [Karim, A.A.](#), [Alam, M.K.](#)

12:30 - 13:30 H Lunch.

13:30 - 13:50 H Bottom simulating reflections and pockmark distribution in the northern Gulf of Mexico. [Kumar, A.](#), [Cook, A.](#), [Portnov, A.](#), [Lawal, M.](#), [Palmes, S.](#), [Frye, M.](#)

14:00 - 15:00 H GIMS General Assembly.

15:00 - 15:30 H Closing Session.

15:30 - 16:00 H Coffee Break.

19:30 - 20:30 H Meeting dinner.
Meeting point at the Parador Atlántico.

FRIDAY

27TH OCTOBER

GIMS15' field trip

Observations of the Gibraltar Arc tectono-sedimentary units.
[Fernández-Puga, M.C.](#), [Gracia, J.](#) and [Somoza L.](#)

7:45 H Gather at the Parador main hall.

8:00 H Departure by bus from Parador.

8:00 - 9:30 H Transit from Cádiz city to Conil de la Frontera.

9:30 - 10:30 H **STOP 1: La Fontanilla beach & cliffs (Conil de la Frontera)**
Walking at low tide along the beach from La Fuente del Gallo to El Roqueo chiringuito (1.5 km) to observe cliffs outcropping Sub-Betic units associated

to mud volcanism in the Gulf of Cadiz: "Blue" marl diapir overlaid by sands-dominated "syn-olistostromic" deposits (Late Tortonian to Messinian in age) showing sandstones associated fluid structures.

10:30 - 11:15 H **Transit from Conil de la Frontera to Trafalgar Cape.**

11:15 - 12:30 H **STOP 2: Visit to the Trafalgar Cape**

Walking along the beach (approx. 20 min.) to see mega-blocks caused by tsunami associated to the main tsunami in the Gulf of Cádiz in 1755 affecting strongly to Cadiz and Lisbon cities.

12:30 - 14:30 H **Lunch at Las Dunas `chiringuito´**

Tapas menu (approx. 40 euros per person).

Note: payment will be by credit card or by cash individually per each person after the meal.

14:30 - 15:30 H **Transit from Trafalgar Cape to Bolonia Bay**

Crossing through the Vejer de la Frontera historical town.

Observations of the Flysch units of the Gibraltar Arc along the transit.

15:30 - 18:00 H **STOP 3: Visit to the Bolonia Bay and Roman port.**

Visit to the Roman port of Bolonia affected by historic and recent earthquakes.

Observations of the Flysch Units of the Gibraltar Arc.

The bay of Bolonia is planned as the exit of the submarine tunnel between Africa and Europe through the Gibraltar Strait.

Observations of the north coast of Africa.

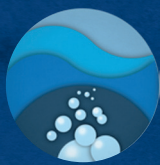
18:00 - 19:30 H **Return to the Parador of Cádiz.**

19:30 H **Estimated time of arrival to the Parador of Cádiz.**

ACKNOWLEDGMENTS

GIMS15 has been partly funded by the project ATLANTIS (PID2021-12455OB-I00) funded by the Spanish Ministry of Science and Innovation; and the European Projects Horizon Europe: GSEU (101075609) and TRIDENT Projects (HORIZON-CL4-2022-RESILIENCE-01).

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