2022 年 12 月 12 日

日本地球掘削科学コンソーシアム会員提案型活動経費報告書

申請活動名： Western Pacific Drilling (WEPAD) 2022 プロポーザル作成 WS
代表者:　佐川拓也
共同申請者：池原　実、板木拓也
活動日程：2020 年 10 月 12 日～10 月 14 日
経費採択額：300,000 円（実支出額：180,784 円）

（１） 開催概要・目的

西太平洋掘削（Western Pacific Drilling: WEPAD）ワークショップを高知大学海洋コア総合研究センターにて開催した。WEPAD は西太平洋での IODP 掘削プロポーザルの作成と実現を目指した情報共有と議論のための集会であり、日本、韓国、中国、台湾等の古海洋研究者が世話人となり持ち回りで開催している。今回は現地参加とオンラインを併せたハイブリッド形式で開催した。

ワークショップでは、2020 年 1 月の IODP 掘削提案促進ワークショップで議論されたプロポーザル案をはじめ、韓国、中国、台湾の研究者らが検討している西太平洋における掘削プロポーザルについても進捗状況の報告と提案・実現に向けた議論を行う。さらに、2020 年 4 月に申請した南部沖縄トラフ掘削（大坪ほか）についても紹介し、テクトニクス系と古海洋系の研究者が相互に情報交換し議論を展開する場とする。古黒潮変動やマニヒキ海台については、それぞれ関連情報の集約と集中的な議論によってプレプロポーザル提出にむけたブラッシュアップを行い、早期の提出を目指す。南部沖縄トラフは Full プロポーザルの作成に向けた情報収集と議論を行い、仮説の強化と掘削実現性の強化を図る。また、ポスト IODP における国際協力体制の構築について議論を行う。

国内外の若手研究者の参加を促し、プロポーザル立案・作成に関わる機会を提供する。期間中に高知コアセンターのコアレポジトリーなどの施設・設備紹介を行うとともに、レガシーコアの利用、ちきゅうや IODP の最新情報の紹介を行い、若手研究者をエンカレッジする機会とする。

（２） 実施内容

WS では 4 つのセッションにそって発表・議論が進められた。

1. Post-cruise research of Chikyu SCORE C9037
2. Paleoceanographic research in Western Pacific and marginal seas
3. Post-IODP updates and Virtual Expedition initiative

4. IODP proposal updates and future drilling/coring sciences in Post-IODP era
具体的なプログラムは添付資料を参照（添付資料 1)。

（3） 成果

ワークショップには日本をはじめ、韓国、中国、台湾の研究者・学生が参加した。3 日間の延べ参加者数は 146 名で、うち 83 名が若手（35 歳以下）であった。研究発表では、最新の西太平洋古海洋変動に関する成果が報告され、参加者と活発な議論が行われた。また、4 つの Consensus Statements と 3 つの Action Items を採択し（添付資料 2)、今後も本ワークショップを継続して開催することを確認した。

（4） 採択経費の使途

J-DESC による支援は現地参加者 3 名の国内旅費として使用させていただいた。詳細は別途提出の内訳を参照（添付資料 3)。ワークショップ参加者の半数以上がオンライン参加ではあったが、旅費支援いただいた 2 名の若手研究者（PD、院生）は現地参加が可能になったことで海外の研究者を含めた議論や交流を対面で行うことができた。2 人の若手研究者からは、SCORE プログラムの研究成果の報告や IODP データを用いた新しい共同研究アイデアの紹介があった。

写真：WEPAD2022 ワークショップの現地参加者。

Western Pacific Drilling Meeting 2022 (WEPAD 2022 hybrid): Paleoceanography in North Pacific Subtropical Gyre and marginal seas

Center for Advanced Marine Core Research, Kochi University,
Nankoku, Kochi, Japan (+ Microsoft Teams)
October 12 - 14, 2022

Day 1: October 12 (Wed) [K: Kochi (in person), T: Teams (online)]

10:00-10:05 [T] Opening remarks
Yuji Sano (Kochi University)

10:05-10:15 [K] WEPAD history and logistics
Takuya Itaki (Geological Survey of Japan, AIST), Takuya Sagawa (Kanazawa University), Minoru Ikehara (Kochi University)

Topic 1: Post-cruise research of Chikyu SCORE C9037

Chair: Minoru Ikehara

10:15-10:35 [K] Summary of Chikyu SCORE Exp913
Minoru Ikehara (Kochi University), Takuya Sagawa, Yuki Morono, Natsumi Okutsu and Chikyu SCORE Exp913 Science Party

10:35-10:55 [K] Lithostratigraphy at Site C9037
Go-Ichiro Uramoto (Kochi University)

10:55-11:15 [K] Preliminary paleomagnetic results from the Site C9037 sediments
Yuhji Yamamoto (Kochi University), Toshitsugu Yamazaki, Toshiya Kanamatsu

11:15-11:35 [T] μXRF ITRAX and WDXRF results from Exp913 Core C9037B
Keiji Horikawa (University of Toyama), Minoru Ikehara, and Exp913 Science party

11:35-11:55 [K] Reconstruction of paleoenvironmental variations and terrestrial organic matter transport by biomarker analysis of a C9037 core from the northwestern Pacific off southwestern Japan: Preliminary reports
Masashi A. Ikeda (Hokkaido University), Hiroyasu Asahi, Ken Sawada

11:55-13:00 Lunch

Topic 2: Paleoceanographic research in Western Pacific and marginal seas

Chair: Takuya Itaki, Kenji M. Matsuzaki

13:00-13:25 [K] Quaternary climate variability of "deep-hot" Indo-Pacific warm pool as revealed by sediment organic biomarkers and phases analysis
Min-Te Chen (National Taiwan Ocean University) and others

13:25-13:50 [K] Low latitude Indo-Pacific climate variability and its relationship with East Asia climate
Sangmin Hyun (Korea Institute of Ocean Science & Technology: KIOST) and Jeongwon Kang

13:50-14:15 [K] Kuroshio temperature variability over the past 30kyr derived from UK'37 and TEX86
Zhe Ying Ang (National Taiwan University), Sze Ling Ho

14:15-14:40 [T] Multiproxy-derived upper ocean temperature records in the Okinawa Trough region
Shih-Yun Lin (National Taiwan University), Sze Ling Ho, Ru-Yun Tung, Yuan-Pin Chang, Pei-Ting Lee, Haiyan Yang, Xinyu Guo, Wing-Le Chan, Min-Te Chen, Chuan-Chou Shen, Ayako Abe-Ouchi

14:40-15:05 Coffee break

15:05-15:30 [T] Reconstructing Hydrography Variations in the Subtropical Western Pacific during Glacial-Interglacial Periods
Wei-Cheng Hsiung (National Sun Yat-sen University)

15:30-15:55 [K] Multi-species planktonic foraminifera-inferred upper ocean hydrographic changes off Northeastern Taiwan over the past 20kyr
Ru-Yun Tung (National Taiwan University), Pei-Ting Lee, Yuan-Pin Chang, Pei-Ling Wang, Chuan-Chou Shen, Sze Ling Ho

15:55-16:20 [T] Glacial-Interglacial Variations in Organic Carbon Burial in the Northwest Pacific Ocean
Yuying Zhang, **Limin Hu** (Ocean University of China), Yonghua Wu, Zhi Dong, Zhengquan Yao, Minoru Ikehara, Xuefa Shi

16:20-16:45 [K] Can turbidite paleoseismological study and paleoceanographic study co-exist in a core? A consideration from SCORE C9035 core preliminary results
Ken Ikehara (Geological Survey of Japan, AIST), Toshiya Kanamatsu, Kan-Hsi Hsiung, Natsumi Okutsu and SCORE C9035 science members

19:00-21:00 Conference dinner

Day 2: October 13 (Thur)

Topic 3: Post-IODP updates and Virtual Expedition initiative

Chair: Yusuke Okazaki

10:00-10:25 [K] Post-2024 new Scientific Drilling Program (ECORD and Japan's effort)
Nobu Eguchi (JAMSTEC), Gilbert Camoin, David McInroy

10:25-10:50 [K] IODP Expedition 386 Japan Trench paleoseismology: Giant piston coring to track past megathrust earthquakes along the Japan Trench
Ken Ikehara (Geological Survey of Japan, AIST), Michael Strasser, Jeremy Everest, Lena Maeda and IODP Expedition 386 Science Party

10:50-11:15 [K] J-DESC-KCC Virtual Expedition Concept
Yusuke Kubo (JAMSTEC)

11:15-11:40 [K] Paleoclimate reconstruction in the Japan Sea from tephrochronology and non-destructive measurements: idea for Virtual Expedition
Arisa Seki (Shinshu University), Ryuji Tada, Tomohisa Irino, Jumpei Yoshioka, Masafumi Murayama

11:40-12:00 Discussion

12:00-13:00 Lunch

Topic 4: IODP proposal updates and future drilling/coring sciences in Post-IODP era

Chair: Takuya Sagawa, Arisa Seki

13:00-13:25 [T] Testing the Ontong Java Nui hypothesis
Takashi Sano (National Museum of Nature and Science), Maria Luisa G. Tejada, Clive R. Neal, Millard F. Coffin, Masao Nakanishi, Peter J. Michael, Jörg Geldmacher, Takeshi Hanyu, Seiichi Miura, Christian Timm, Anthony A. P. Koppers, Daisuke Suetsugu, Takashi Tonegawa, Akira Ishikawa, Kenji Shimizu, Paterno Castillo, Elisabetta Erba, Catherine A. Rychert, Adélie Delacour, Loyc Vanderkluysen

13:25-13:50 [K] Neotectonics in Ryukyu arc: Quaternary fault activity and uplift and subsidence Processes
Makoto Otsubo (Geological Survey of Japan, AIST)

13:50-14:15 [K] Drilling in the Okhotsk Sea: Chikyu SCORE program and future perspectives
Yusuke Okazaki (Kyushu University)

14:15-14:40 [T] A new proposal of SCORE program for re-drilling in the northern East China Sea and possibility of other drilling programs
Yoshimi Kubota (National Museum of Nature and Science), Ken Ikehara,

Kenji Matsuzaki, Saki Ishino, Ayanori Misawa, Makoto Otsubo, Ryuji Tada, Tomohisa Irino, Kosaku Arai, Takuhiko Inoue, Takuya Sagawa, Minoru Ikehara, Yusuke Okazaki, Keiji Horikawa, Hiroki Matsuda and KH-21-3 cruise members

14:40-15:05 Coffee break

15:05-15:30 [K] Paleoceanographic Evolution of the Central North Pacific since the Late Miocene
Kenji M. Matsuzaki (University of Tokyo)

15:30-15:55 [T] Changes in overturning circulation in the Pacific during glacial-interglacial cycles
Hidetaka Kobayashi (University of Toyama)

15:55-16:55 Discussion

16:55-17:00 [K] Closing remarks
Minoru Ikehara (Kochi University)

Day 3: October 14 (Fri)

9:00-17:00 Field trip
Ryugado Cave (limestone cave)
Ioki Cave (natural cave)
Ananai Formation (Shallow marine sedimentary sequences)
Tei Mélange (Shimanto Belt accretionary complex)
Inoue Winery (view from Mt. Sanmbosan)

WEPAD (Western Pacific Drilling Meeting) 2022

October 12-13, 2022
Kochi, Japan, and Teams

Consensus Statements

Consensus 1: The WEPAD thanks to Nobu Eguchi for providing the status of planning of post-2024 Scientific Ocean Drilling by ECORD and Japan. The WEPAD also appreciates Yusuke Kubo for showing a concept of future program for Virtual Expedition using existing cores in Kochi Core Center. These future programs will be useful for our paleoceanographic community.

Consensus 2: The WEPAD are reminded again that there are multiple projects for future drilling in western Pacific and marginal seas and that further proposal efforts are underway. We recommend that more planning documents be compiled for future international programs beyond 2024.

Consensus 3: The WEPAD recognize the activities of paleoceanographic research in Japan, Korea, China, and Taiwan in the western Pacific and marginal seas. The WEPAD also reaffirmed that international cooperation is as essential as ever for the advancement of paleoenvironmental research. We plan to continue to use WEPAD meeting to provide a forum for the regular exchange of the latest information and knowledge.

Consensus 4: The next WEPAD Meeting will be held at Qingdao, China in 2023, hosted by the First Institute of Oceanography, Ministry of Natural Resources.

Action Items (draft)

Action Item 1: The WEPAD recommends participating the upcoming workshop on the future of Scientific Ocean Drilling with Mission-Specific Platforms and Chikyu (Phase 1: online), which will be held on January 2023.

Action item 2: Proponents of existing IODP proposal should continue their efforts to revise proposals in preparation for the start of a new Scientific Ocean Drilling programs after 2024. Potential proponents should also work toward new drilling/coring proposals.

Action item 3: The WEPAD will work to stimulate the exchange of information among relevant researchers, especially regarding new Scientific Ocean Drilling programs after 2024.

Timeline for new Scientific Ocean Drilling programs beyond 2024

Jan. 2023: Workshop on the future of Scientific Ocean Drilling with Mission-Specific Platforms and Chikyu (Phase 1: online)

Fall 2023: Next WEPAD meeting in Qingdao

Fall 2023: Workshop on the future of Scientific Ocean Drilling with Mission-Specific Platforms and Chikyu (Phase 2: in-person)

Fall 2024: Start new Scientific Ocean Drilling programs