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R/V Yokosuka “Cruise Report”

YK14-17

Cross-ministerial Strategic Innovation Promotion Program

(SIP) Next-generation Technology Development for

Seafloor Resource Survey, Okinawa Trough

Aug. 31, 2014 - Sep. 19, 2014

Japan Agency for Marine-Earth Science and Technology

(JAMSTEC)

衝撃!!「本当にMBESだけで見つかるなんて…」

よよこスポ

熱水 発見へ

近日中

「本当に採水しなくて良いの？」

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▲MBESを搭載し航走する「よこすか」

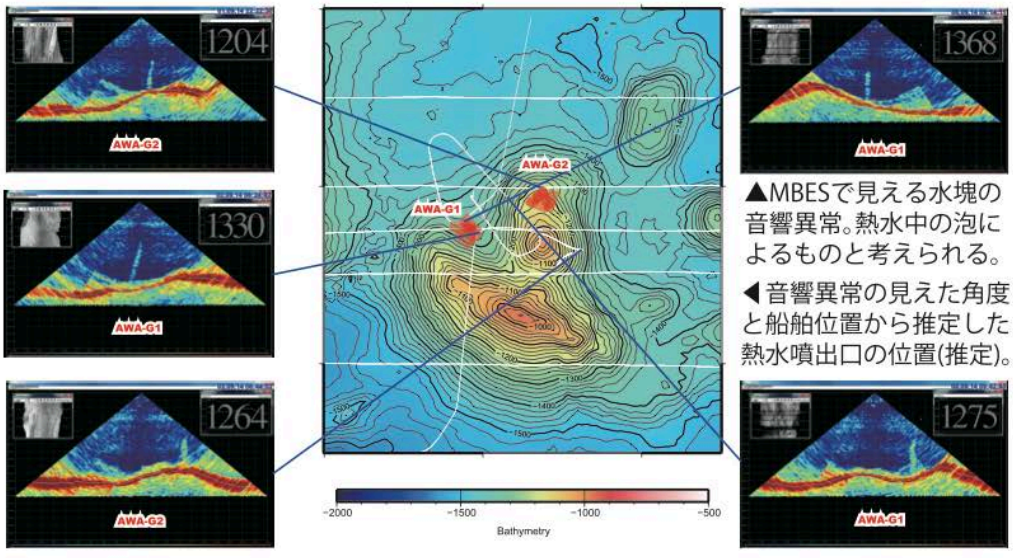
ついに新手法確立宣言だ。本来は海底地形を取得するためのMBESが、沖縄トラフの熱水活動を捉える強力な武器となることが明らかとなった。MBES探査法を主張してきた八王子市の中村さん(40)＝恐妻会会長＝は，「MBES探査法は簡便でありながら広範囲を短時間で網羅できます。AUV潜航で検出した熱水性異常とも位置が一致しました。この二週間で，すでに未知の熱水活動域を3箇所で検出しており，あとは潜って発見するだけです。スネ毛を食べるカニが見つかるかもしれませんよ。」と興奮を隠せない。

今後は新手法を用いて南部沖縄トラフの調査を行うという。

これまで10年間にわたって採水による熱水プルーム探査を続けてきた化学班は複雑な思いだ。川口さん(32)＝蹴球部＝は「本当に採水しなくて良いんですか？。そりゃ楽になるけども，商売あがったりですよ…。」と困惑。

一方，地物班の北田さん(34)＝独身貴族＝は「熱水探査の名目で磁力調査が出来て一石二鳥ですよ。」とえびす顔。本業の違いで明暗がわかれた形だ。

「簡便・広範囲の探査が可能に」



▲MBESで見える水塊の音響異常。熱水中の泡によるものと考えられる。

◀音響異常の見えた角度と船舶位置から推定した熱水噴出口の位置(推定)。

1. Cruise Information

● Cruise ID: YK14-17

● Name of vessel: R/V Yokosuka

● Title of the cruise: Cross-ministerial Strategic Innovation Promotion Program (SIP) Next-generation Technology Development for Seafloor Resource Survey

● Title of proposal: Systematic and exhaustive survey of seafloor hydrothermal activity occurring in Iheya-Izena Zone (IIZ), mid-Okinawa Tough

● Cruise period: 31 Aug 2014 - 19 Sep 2014

● Ports of call: from Naha to Yokosuka

● Research area: Okinawa Trough

2. Researchers

● Chief scientist [Affiliation]: KAWAGUCCI, Shinsuke [JAMSTEC]

● Representative of the science party [Affiliation]: NAKAMURA, Kentaro [JAMSTEC]

● Science party (List) [Affiliation, assignment etc.]

KAWAGUCCI, Shinsuke [JAMSTEC]

NAKAMURA, Kentaro [JAMSTEC]

KITADA, Kazuya [JAMSTEC]

MINAMIZAWA, Satomi [Nippon Marine Enterprise]

FUWA, Yuji [Nippon Marine Enterprise]

● AUV URASHIMA operation team

Operation Manager	Toshiaki Sakurai
1st Submersible Technical Officer	Akihisa Ishikawa
1st Submersible Technical Officer	Kazuki Iijima
2nd Submersible Technical Officer	Takuma Onishi
2nd Submersible Technical Officer	Ryo Saigo
2nd Submersible Technical Officer	Yudai Tayama
2nd Submersible Technical Officer	Masaya Katagiri

● R/V YOKOSUKA Officers and Crew

Captain	Yoshiyuki Nakamura
Chief Officer	Yasuhiko Sammori
2nd Officer	Tomoyuki Takahashi
3rd Officer	Yusuke Ishii
Chief Engineer	Tadashi Abe

1st Engineer	Wataru Kurose
2nd Engineer	Katsuo Yamaguchi
3rd Engineer	Kazuki Ohno
Chief Electronic Operator	Hiroyasu Saitake
2nd Electronic Operator	Yoshikazu Kuramoto
3rd Electronic Operator	Ryosuke Komatsu
Boat Swain	Hatsuo Oda
Able Seaman	Hiroaki Nagai
Able Seaman	Tsuyoshi Chimoto
Able Seaman	Yasuo Konno
Sailor	Kento Kanda
Sailor	Yuta Motooka
Sailor	Yoshihiro Ogawa
No.1 Oiler	Toshikazu Ikeda
Oiler	Ryo Matsuuchi
Oiler	Kazuo Sato
Oiler	Toshinori Matsui
Oiler	Seiya Watanabe
Chief Steward	Teruyuki Yoshikawa
Steward	Manami Takahashi
Steward	Yoshie Hidaka
Steward	Hideo Fukumura
Steward	Akio Suzuki

3. Observation

● Observation

We conducted a systematic and exhaustive survey of seafloor hydrothermal activity occurring in Iheya-Izena Zone (IIZ), mid-Okinawa Tough, to reveal how many hydrothermal fields are present and how variable activity and fluid chemistry they show for estimating potential of Kuroko-Yoshoku. A MultiBeam Echo-Sounder (MBES) equipped with R/V Yokosuka was used to identify Acoustic Water-column Anomaly (AWA) [e.g. Tanahashi et al., 2014], likely suggesting presence of bubbles and/or particles exhausting with hydrothermal fluids. By dives of Autonomous Underwater Vehicle Urashima to areas showing AWA, seafloor geophysical properties (topography, magnetism, etc.), water column chemistry (ORP, Turbidity, etc.), and AWA to understand characteristics of hydrothermal activity there.

4. Notice on Using

Notice on using: Insert the following notice to users regarding the data and samples obtained.

This cruise report is a preliminary documentation as of the end of the cruise.
This report may not be corrected even if changes on contents (i.e. taxonomic classifications) may be found after its publication. This report may also be changed without notice. Data on this cruise report may be raw or unprocessed. If you are going to use or refer to the data written on this report, please ask the Chief Scientist for latest information.
Users of data or results on this cruise report are requested to submit their results to the Data Management Group of JAMSTEC.