

ABE Debrief Summary

Overview

- 25-day cruise to the Equatorial EPR ($\sim 2^{\circ}\text{S}$), August-September 2008 aboard the RV Dayang Yihao (DYYH, China)
- PI was Dr Chunhui Tao (China); lead PI for all ABE operations was Dr. Jian Lin (WHOI)
- Objective: locate hydrothermal activity in area of 2005 cruise survey
- Pre-cruise planning, mobilization/demobilization all went very smoothly

Operations

- Surface ship operations were used as “Phase 1” type survey instead of ABE
- 4 dives – significantly less than the US PI had expected (lead PI decision at sea)
- All 4 dives went entirely according to plan:
 - making high-resolution maps of the seafloor (“Phase 2” survey) - large areas
 - conducting near-bottom photographic surveys (“Phase 3”), with temperature, turbidity
 - ADCP data were collected during both dives; photos of active vents



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NDSF Equipment

- All science systems worked fine: LBL & DVL navigation, SM2000 multibeam, digital still camera
- Data reduced quickly after each dive to enable planning by scientific party
- ABE team generated first-cut SM2000 multibeam maps within 12-24 hrs of each dive
- Some problem with ability to track the vehicle acoustically from the surface ship. Not a major problem. ABE team rigged a system to monitor the vehicle.
- Early temporary problem with synchronization of the over-the-side transducer

User-Provided Equipment

- Eh sensor from Dr Koichi Nakamura (AIST, Japan) worked flawlessly
- 2 MAPRs from Dr Ed Baker (NOAA-PMEL) worked very well
- USBL beacon on ABE from Chinese scientific party did not work (acoustic noise); not a problem because other navigation systems worked well

Personnel

- ABE team worked very hard and effectively. Impressed the Chinese party.



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Data Hand-over

- All documentation and data hand-over took place exactly as planned

Overall Results and Recommendations

- ABE Team has established the “gold standard” for operations at sea. This sets a high standard to be achieved by Chinese investigators.
- ABE team of 4 would be much more effective and provide training opportunities, even for normal operational cruises like this one
- PIs and the science party were very pleased with the operations, effort, collegiality and overall results of the ABE operations.

