

## **1. Cruise Information**

### **1-1. Cruise number**

NT09-06 leg1

### **1-2. Ship name**

R/V Natsushima, ROV Hyper Dolphin

### **1-3. Title of the cruise**

Deep-sea Biology Investigation using ROV Hyper-Dolphin, in 2009

### **1-4. Chief Scientist**

Katsunori Fujikura

Extremobiosphere Research Program, Institute of Biogeosciences, Japan Agency  
for Marine-Earth Science and Technology

### **1-5. Representative of Science Party**

(1) Katsunori Fujikura Extremobiosphere Resarch Program, Institute of  
Biogeosciences, Japan Agency for Marine-Earth Science and Technology

“What is biological differences between Calyptogena soyoae and C. okutanii?”

(2) Florence Pradillon J Extremobiosphere Resarch Program, Institute of  
Biogeosciences, Japan Agency for Marine-Earth Science and Technology

“Succession patterns and colonization mechanisms of chemosynthetic organisms  
associated to whale falls in Sagami Bay”

(3) Kazumasa Oguri Extremobiosphere Resarch Program, Japan Agency for  
Marine-Earth Science and Technology

“Four (surface, depth and time) dimensional monitoring in biophile elements at  
sediment-water interface in deep-sea”

### **1-6. Cruise period**

Leg1-1, 2009/4/24-2009/5/3, Leg1-2, 2009/5/3-2009/5/6

### **1-7. Port call**

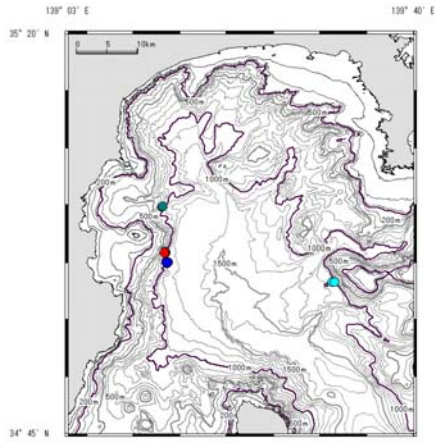
Left port---JAMSTEC, 2009/4/24

Replaced scientists at--- Off port of Misaki, 2009/5/4

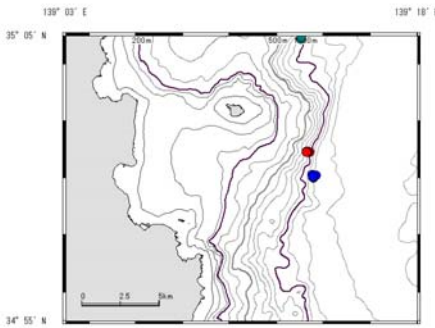
Return--- JAMSTEC, 2009/5/6

### **1-8. Research Area**

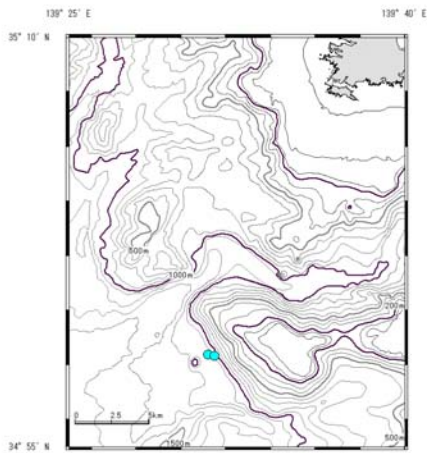
Off Hatsushima Island, NE Off Hatsushima Island and Okinoyama Bank sites in  
Sagami Bay



Dive sites in Sagami Bay.



Dive sites at the Off Hatsushima Island and the NE Off Hatsushima Island sites, Sagami Bay.



Dive sites at the Okinoyama Bank, Sagami Bay.

## **2. Overview of Observation**

### **2-1. Purpose, background**

What is biological differences between *Calyptogena soyoae* and *C. okutanii*?

To find out concurrence both vesicomid clams, *Calyptogena soyoae* and *C. okutanii* in same habitat, we have investigated multi-biological aspects including ecology, physiology, diversity, environment factors.

Succession patterns and colonization mechanisms of chemosynthetic organisms associated to whale falls in Sagami Bay

To find out Succession patterns and colonization mechanisms of chemosynthetic organisms, we have investigated about whale fall community .

Four (surface, depth and time) dimensional monitoring in biophile elements at sediment-water interface in deep-sea

To observe environment change in deep-sea sediment, we deployed long-term monitoring system in Sagami Bay.

### **2-2. Observations, activities, Methods, Instruments, Research results**

(1) Ecology: Biological sample collection. In-situ observation. Experiment for transform process of symbiotic bacteria, life story, hybrid and genetic diversity and growth rate.

(2) Physiology : Characterization of *Calyptogena* gamete. Blood cell function: Morphological characterization of the immunological responses of hemocytes, *Calyptogena* sp.

(3) Biodiversity : Taxonomical and phylogenetic analysis of micro-organisms, protists and mega-benthos.

(4) Environmental measurements & DO measurement : Long-term environmental monitoring

(5) Community succession : Biological sample collection and in-situ observation of whale fall community.