

太平洋プレート

伊豆半島

IBM-4

Site U1436

Site U1437

Exp. 350 IBM-3

Exp. 352

IBM-2

フィリピン海プレート

Exp. 351 IBM-1

Nishinoshima

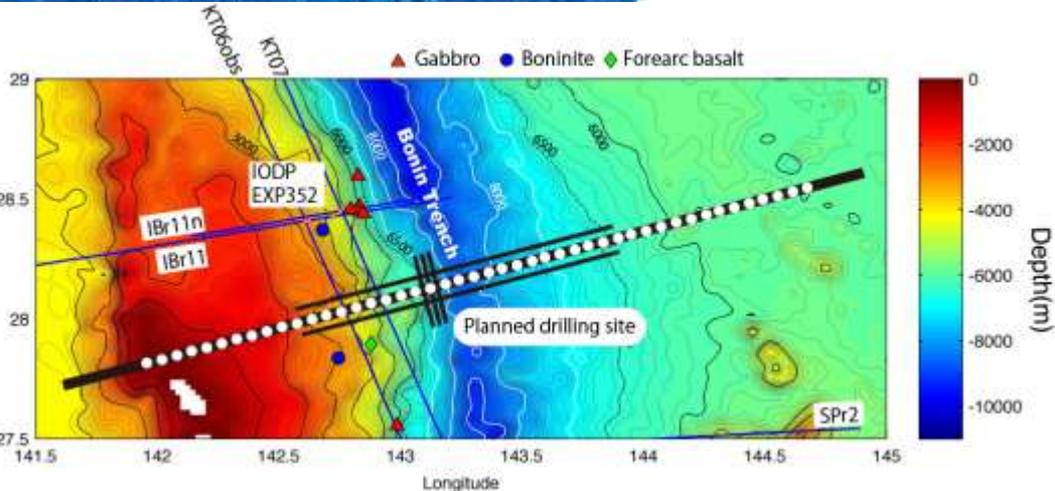
**Prof. Katsuyoshi Michibayashi**

**Shizuoka University, Institute of Geosciences**

Our scientific plan includes **imaging Pacific plate subduction below the Philippine Sea plate** in the Ogasawara (Bonin) Island region. How do steep slab dip and deep trench depth relate to the structure of the incoming and upper plates?

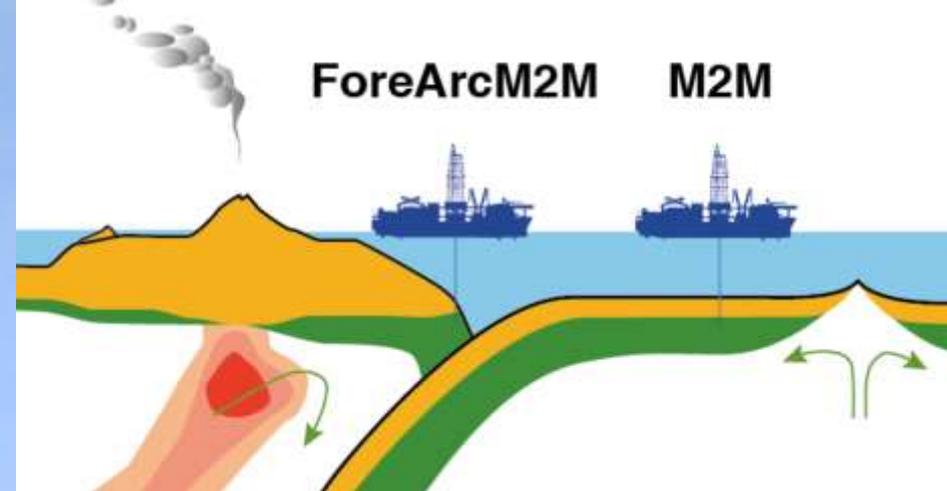
Our long 2D survey line is set up to reveal **a detailed subduction zone image from the incoming Pacific plate to fore-arc area**, which will provide key information for understanding why the Mariana-type trench is the deepest in the world. It is also designed to provide the images needed for selecting **the best sites in the Bonin fore-arc for drilling** through the basal crust and into the upper mantle.

We are planning a **collaborative project with Prof. Gail Christeson at UTIG**. She will submit a proposal to NSF to use the R/V Marcus G. Langseth to perform the site survey needed by our proposed expedition across the Bonin Trench, and we will provide the OBS instruments.



Long-offset 2D seismic reflection with OBS refraction for our full scientific site survey: 20 days. We note that we can install 25 to 30 OBS by our own research grant. Short 2D seismic reflection: 5 days.

IODP Pre Proposal  
898-Pre (April, 2016)



# **Oceanic to Proto-arc Mantle Transformation: Fore Arc M2M (Moho-to- Mantle) in the Bonin Trench, Northwestern Pacific**

The science is exciting and SEP recommends development of a full proposal with required site survey data sets.

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