

The crustal deformation in the Izu-Bonin rear arc region after ceased of Shikoku Basin spreading

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There is the en-echelon arrangement is located in the eastern side of Shikoku Basin, and it is known to activate after ceased spreading at 15 Ma (Okino et al., 1994) of Shikoku Basin by geologic sampling of Ishizuka et al. (2003). Japan Agency for Marine-Earth Science and Technology has been carried out many multi-channel seismic reflection surveys since 2004 in Izu-Bonin region. From our previous results, the recent lateral fault zone is located in east side of Shikoku Basin. We carried out high density grid multi-channel seismic reflection (MCS) survey using tuned airgun in order to obtain the relationship between the lateral faults and en-echelon arrangement in KR08-04 cruise. This survey is also contributed the IODP proposed site IBM-3 for understanding the nature of across-arc variation in magma chemistry. The survey line IBr5 is across the IBM-3 and is also conducted wide-angle reflection survey using 100 OBSs with 5km spacing in 2007. Seismic velocity image obtained from wide-angle OBS data is identified 5 km/s and 6 km/s contours below the acoustic basement obtained by MCS survey. The five units over acoustic basement can be recognized in MCS profiles around IBM-3. The line IBr5 is also across the Kanbun seamount which has geological age of 8 Ma by sampling of Ishizuka et al. (2003). We identified the deformation of sediments in Shikoku Basin after activity of Kanbun seamount at 8 Ma in MCS profile. It is estimated to activate a part of the eastern side of Shikoku Basin after construction of en-echelon arrangement and termination of Shikoku Basin spreading. In this meeting, we will describe the relationship and effect between the deformation in the eastern side of Shikoku Basin and sediments from en-echelon arrangement (e.g. Kanbun seamount) by comparison with MCS and velocity profile.