

Fault geometry and its characteristics in the southern part of Abukuma ridge, offshore Fukushima Prefecture, Japan

CHIYONOBU, Shun^{1*} ; ARATO, Hiroyuki¹

¹Faculty of International Resource Sciences, Akita University

The Abukuma ridge extends for more than 100 km from off the Soma to off the Kashima city along Japan Trench where the Pacific Plate is being subducted beneath the North American Plate. 3D seismic survey and its observations were carried out in this area off the Iwaki city, Fukushima prefecture, northeastern Japan by METI (JOGMEC, 2011). We referred to boreholes MITI Jhoban Oki (JAPT, 1993) in order to connect our seismic interpretation and stratigraphic data. As a result, nine seismic horizon (reflectors) were assigned upper limit of Santonian, upper limit of Campanian, upper limit of Maastrichtian, upper limit of Paleocene, upper limit of Oligocene, upper limit of Lower Miocene, upper limit of Middle Miocene, upper limit of Upper Miocene, and upper limit of Pliocene respectively. Abukuma ridge are distributed in north-northeast (NNE) to south-southwest (SSW) trending anticline recognized within pre-Middle Miocene strata. A number of lineaments, normal faults, bunch perpendicular within Abukuma ridge, most of which were initiated in the Cretaceous and had been active through the Paleogene, Miocene, and Pliocene. Fault morphology is classified into west-dipping north-south trending faults and north dipping east-west trending faults. They displaced by several hundreds to tens of meters. The most remarkable feature is the Abukuma ridge structure divided by large faults across the seismic section. It is apparent that there are dividing four areas where large faults and these faults are concentrated. Some of the large faults have significant strike-slip component. Subsurface structures delineated by reflection 3D seismic data suggest a different phase of activities of Abukuma ridge. Fault geometry is reflecting a complicated slip history in this area.