

Duplexes and other geologic structures in the Misaki Formation of the southernmost Miura Peninsula: Revisited

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The Jogashima Island in the southernmost Miura Peninsula, Miura City, Kanagawa Prefecture has been studied since Kodama (1968) and many others. We independently studied the geologic structures of the Misaki Formation for these 40 years (Ogawa & Taniguchi 1988; Hanamura & Ogawa, 1993; Stow et al., 1998; Yamamoto et al., 2009), and reached many interesting conclusions including duplex structures. They are summarized as follows; The Tsurugizaki anticline trends not westward but northwestward in an en echelon pattern, whose south wings dip steeply while north wings gently dip, similar to the Nankai prism toes (Kawamura et al., 2009; Anma et al., 2011). The Toriya anticline is overturned southward, displaying many thrust faults and duplex structures, as the western extension of the Sengen thrust as a fault-propagation fold (Yamamoto et al., 2005). Not all the thrust duplex structures have south-vergency but some north, also resembling the Nankai. Both thrust duplexes and conjugate thrust systems have northwest-trending P-axes in horizontal reference frame (Ogawa & Horiuchi, 1978). Those duplexes and thrust faults are either of tectonic origin or slump origin, the latter may relate to liquefaction and mud-diapirism. At Awazaki, easternmost tip of the Jogashima, the subsequent Misaki Formation is eroded more than 300 m with 30 degrees discordance, suggesting the anticline-syncline formation began during deposition of the superjacent Hatsuse Formation. N-S or N30E-trending left-lateral fault system that is overwhelmed in the peninsular and Tokyo Bay areas to the Sagami trough as discussed by Mori et al (2010). As a result both the Miura and Boso tectonics are characterized by the Izu forearc collision, but the internal structures are similar to those in the Nankai prism (Yamamoto, 2005; Yamamoto et al., 2009; Michiguchi and Ogawa, 201).

(References) Anma et al. 2011 Springer Solid Earth 8, 169-196; Kawamura et al. 2009 GSAB 121, 1629-1646 doi: 10.1130/B26219.1; Hanamura & Ogawa 1993 IA 3, 126-141; Kodama, 1968 J. Geol. Soc. Japan 74, 265-278; Michiguchi & Ogawa 2011 Springer Solid Earth 8, 229-246; 2009; GSASP480 249?262, doi:10.1130/2011.2480(12); Mori et al. 2010 Chigaku-Zasshi 119, 585-614; Ogawa & Horiuchi 1978 Jour. Phys. Earth, 26, Suppl., S321-336; Michiguchi & Ogawa 2011 GSASP 480480, 249-262; Ogawa & Taniguchi 1988 Modern Geol. 12, 147-168; Stow et al. 1998 Sediment. Geol. 115, 351-381; Yamamoto et al. 2000 Tectonoph 325, 133-144; Yamamoto et al. 2005 Tectonics, 24, TC5008, doi:10.1029/2005TC001823; Yamamoto et al. 2009 Island Arc 18, 496-512.

Keywords: Jogashima Island, Misaki Formation, duplex, thrust system, fault-propagation fold