High-resolution Aeromagnetic Survey over the Eastern Sagami Bay Area, Kanto Region, Japan

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The Geological Survey of Japan (GSJ), AIST has been conducting various geophysical surveys such as seismic reflection, ocean floor gravity and aeromagnetic surveys in the transition zones of the Japanese Islands to better understand the subsurface structures related to active faults and geologic basement structures for some model areas.
A high-resolution aeromagnetic survey was conducted over the eastern Sagami Bay Area, Kanto Region, Japan in November 2016. The survey was flown along E-W traverse lines and N-S tie lines spaced 250 m and 1,000 m, respectively. The flight altitudes were 150 m above sea level over offshore areas and 300 m above terrain over onshore areas, respectively. Total magnetic intensities were observed by a Cesium magnetometer at 10 Hz and flight paths were recovered by DGPS. A preliminary aeromagnetic map without height correction has been compiled. According to the map, characteristics of magnetic anomalies are summarized as follows:
(1) An ESE-WNW trending magnetic high belt, parallel to a gravity high belt (Okuma et al., 2016) extends from the northern part of the Miura Peninsula to Enoshima Island, corresponding to the Hayama Upheaval Belt.
(2) A NW-SE magnetic trend extends from the south of Enoshima Island to the Takeyama Faults in the Miura Peninsula.
(3) In the middle of the Miura Peninsula, a magnetic high is distributed over the area where ultrabasic rocks like serpentinites outcrop.
(4) In the Miura Peninsula, another magnetic high lies over the distribution area of the Early ? Middle Miocene Yabe Formation, Hayama Group in which small outcrops of basaltic rocks reside at its northern boundary. This magnetic high further extends southeastward along the Kinugasa Faults.
(5) Two dipoles of magnetic anomalies with a reverse polarity are distributed over the Kamegi Spur offshore of the western Miura Peninsula.

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