

GEOMAGNETIC SURVEY AT SEA

This is a continuation of the report of geomagnetic surveys at sea conducted by the Hydrographic Department. This report gives brief summary of five cruises carried out in 1998.

This report gives the compiled results of five cruises, Suruga Wan, Offing of Rumoi-Okusiri, Offing of Kusiro, Around Hatizyo Sima and Offing of Rumoi-Okusiri (part).

Key word: marine geomagnetic survey.

1. Surveys

The total magnetic intensity at sea surface was measured by a proton precession magnetometer of Kokusai electronics corporation PMM-200 installed on the survey vessel Meiyo of the Hydrographic Department (JHD).

The sensor was towed about 200m behind the vessel. The data from the sensor were sampled every 20 seconds.

2. Data processing and Results

The measured total magnetic intensity include components of external field variation. The correction of the external field variation was carried out based on the continuous magnetic observations at a reference magnetic observatory close to the survey area.

The details on the compiled magnetic surveys, the name of the reference magnetic observatory, the reference values for external field correction and the epoch year of data processing are listed in Table 1.

For calculations of the total intensity magnetic anomaly values, the IGRF1995 model were used as the core field model in accordance with the recommendation of the IAGA.

Geomagnetic total intensity anomaly maps are shown in Fig. 1~5 on reduced scales from the original chart sheets.

Reduction and compilation of this report have been made by K. Kumakawa and K. Kawamura of the Geodesy and Geophysics Division.

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References

The result of geomagnetic surveys at sea for preceding years are found in the following publication series.

Data Report of Hydrographic Observations, Series of Astronomy and Geodesy, No.18, 1984,
Ibid., No.19, 1985,
Ibid., No.20, 1986,
Ibid., No.21, 1987,
Ibid., No.22, 1988,
Ibid., No.23, 1989,
Ibid., No.24, 1990,
Ibid., No.25, 1991,
Ibid., No.26, 1992,
Ibid., No.27, 1993,
Ibid., No.28, 1994,
Ibid., No.29, 1995,
Ibid., No.30, 1996,
Ibid., No.31, 1997,
Ibid., No.32, 1998.

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Table 1. Details on the compiled magnetic surveys at sea

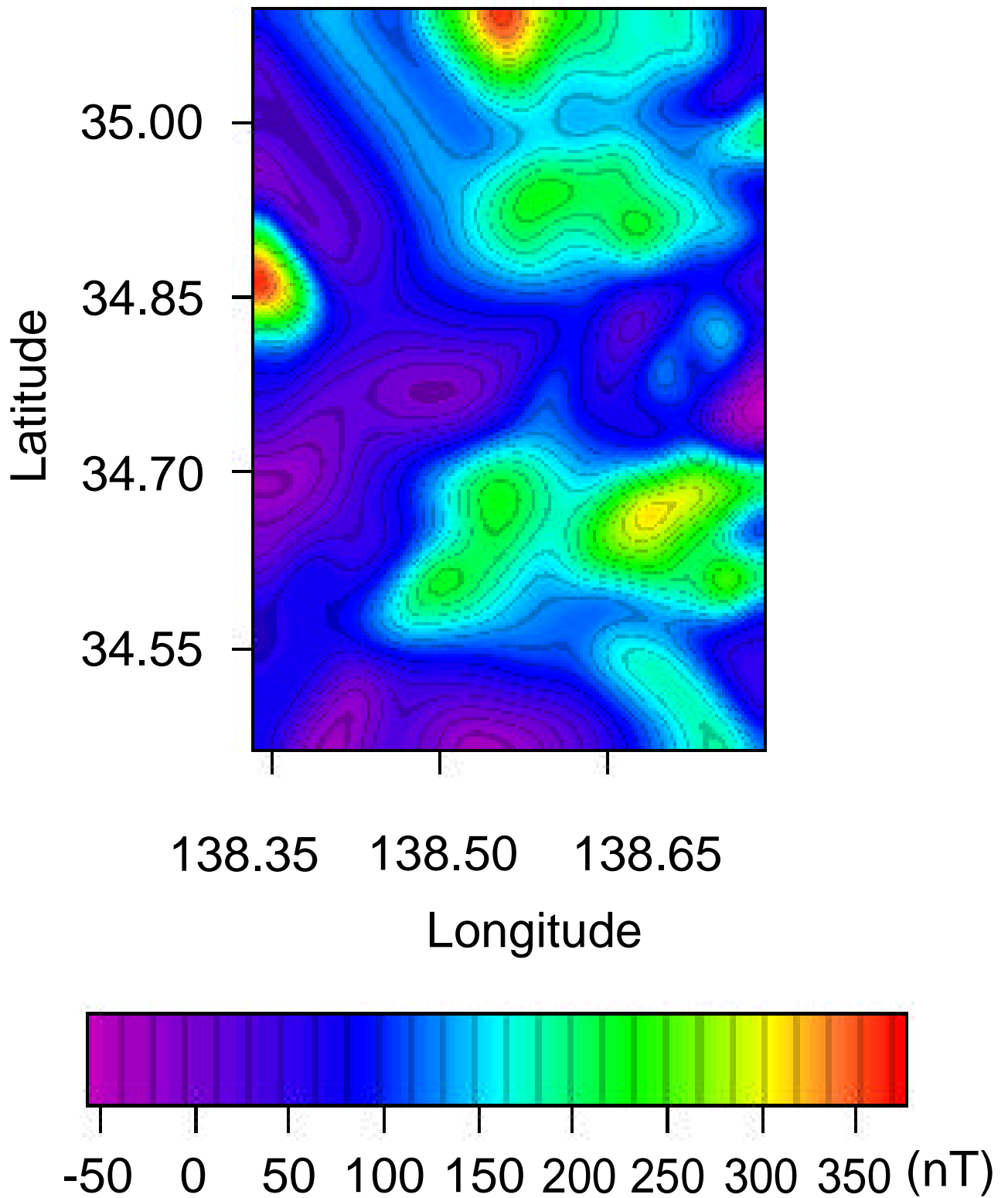
Cruise index	96SU	96RU
Area	Suruga Wan	Offing of Rumoi-Okusiri
Period	May 31 - Jun. 10, 1996	Jul. 16 - Aug. 8, 1996
Vessel	Meiyo	Meiyo
Magnetometer	PMM-200	PMM-200
Positioning	Integrated Navigation System	Integrated Navigation System
Track lines	1 naut. mile	2 naut. mile in N-S
Anomaly map	Fig. 1	Fig. 2
Scale of original map	1/200,000	1/200,000
Map projection	UTM	UTM
Reference Magnetic Observatory	Matuzaki (34 ° 45'.0 N, 138 ° 46'.8 E)	Memambetu (43 ° 54'.5 N, 144 ° 11'.6 E)
Reference value for an external field correction	46,042nT	49,421nT
Core field model	IGRF1995	IGRF1995
Contour interval	25nT	25nT
Epoch year	1996.4	1996.7

Cruise index	96KU	96HT
Area	Offing of Kusiro	Around Hatizyo Sima
Period	Sep. 30 - Oct. 28, 1996	Dec. 3, 1996 - Jan. 19, 1997
Vessel	Meiyo	Meiyo
Magnetometer	PMM-200	PMM-200
Positioning	Integrated Navigation System	Integrated Navigation System
Track lines	2 naut. mile in NW-SE	0.5 naut. mile in E-W
Anomaly map	Fig. 3	Fig. 4
Scale of original map	1/200,000	1/50,000
Map projection	UTM	TM
Reference Magnetic Observatory	Memambetu (43 ° 54'.5 N, 144 ° 11'.6 E)	Hatizyo (33 ° 04'.2 N, 139 ° 49'.7 E)
Reference value for an external field correction	49,474nT	45,200nT
Core field model	IGRF1995	IGRF1995
Contour interval	25nT	50nT
Epoch year	1996.8	1997.0

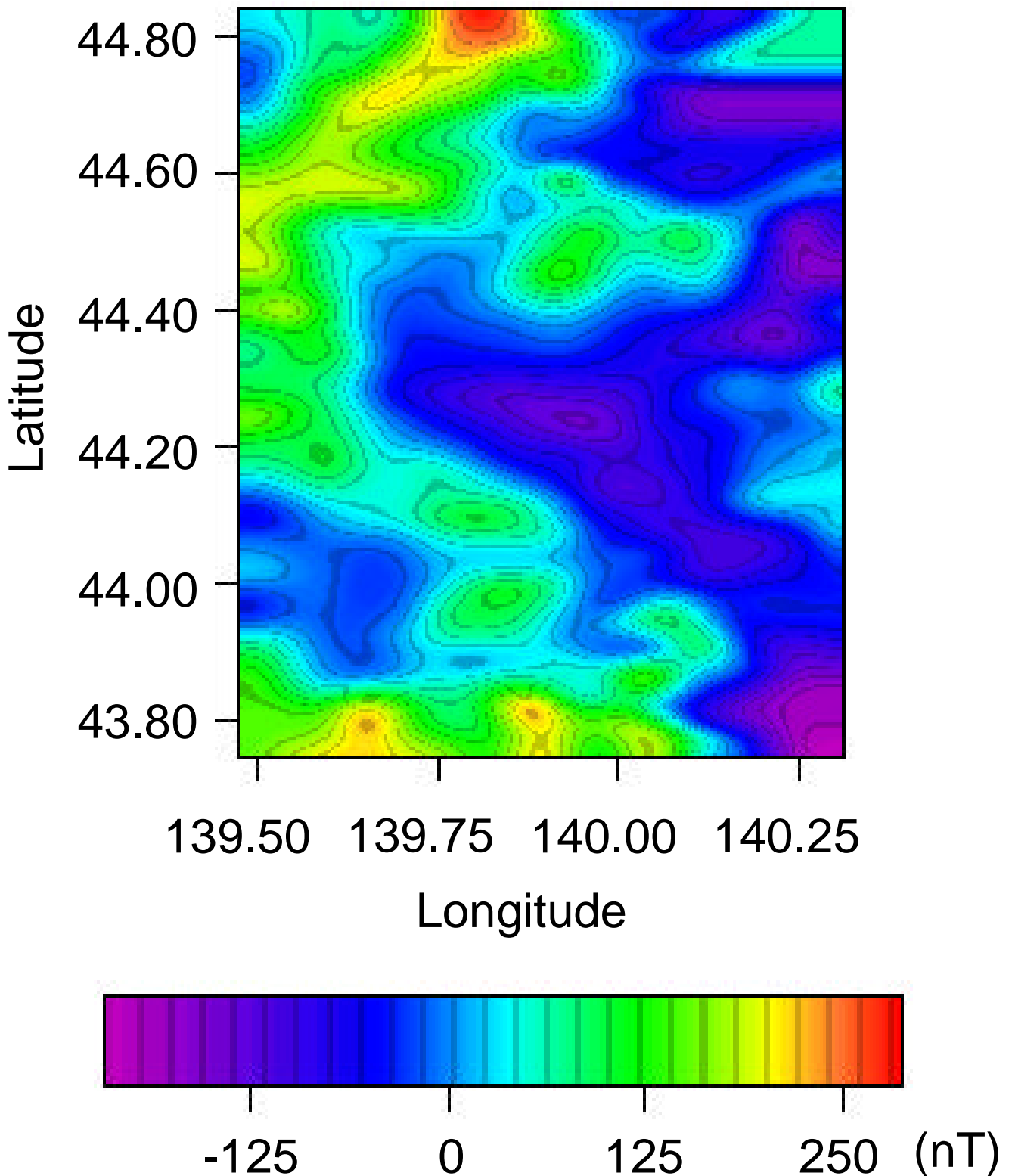
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Table 1. Details on the compiled magnetic surveys at sea

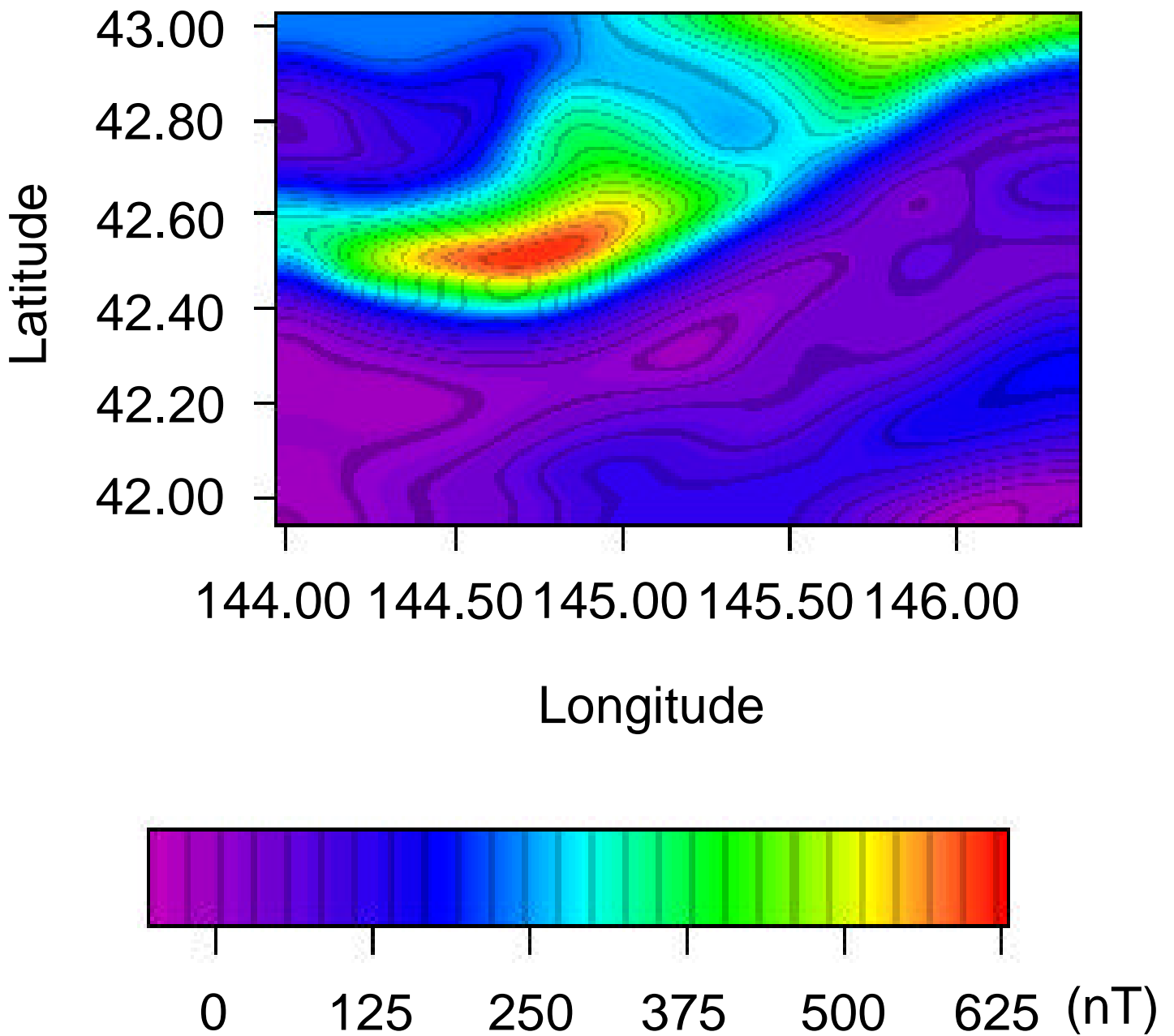
Cruise index	97RU
Area	Offing of Rumoi-Okusiri (part)
Period	May 31 - Jun. 10, 1996
Vessel	Meiyo
Magnetometer	PMM-200
Positioning	Integrated Navigation System
Track lines	2 naut. mile in N-S
Anomaly map	Fig. 5
Scale of original map	1/200,000
Map projection	UTM
Reference Magnetic Observatory	Memambetu (43 ° 54'.5 N, 144 ° 11'.6 E)
Reference value for an external field correction	49,485nT
Core field model	IGRF1995
Contour interval	50nT
Epoch year	1997.7



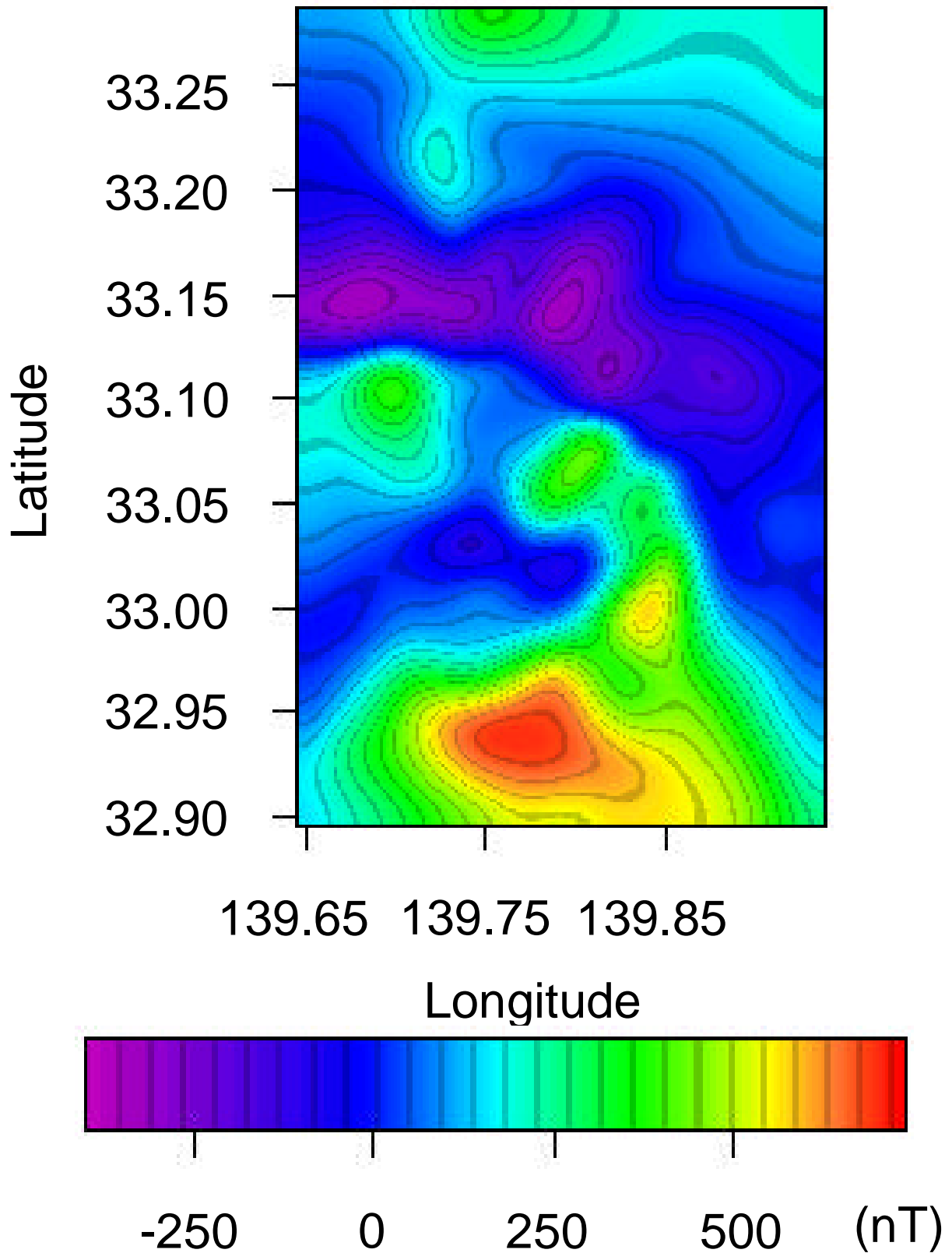
**Fig. 1 Geomagnetic Total Intensity Anomaly Map,
Suruga Wan.**



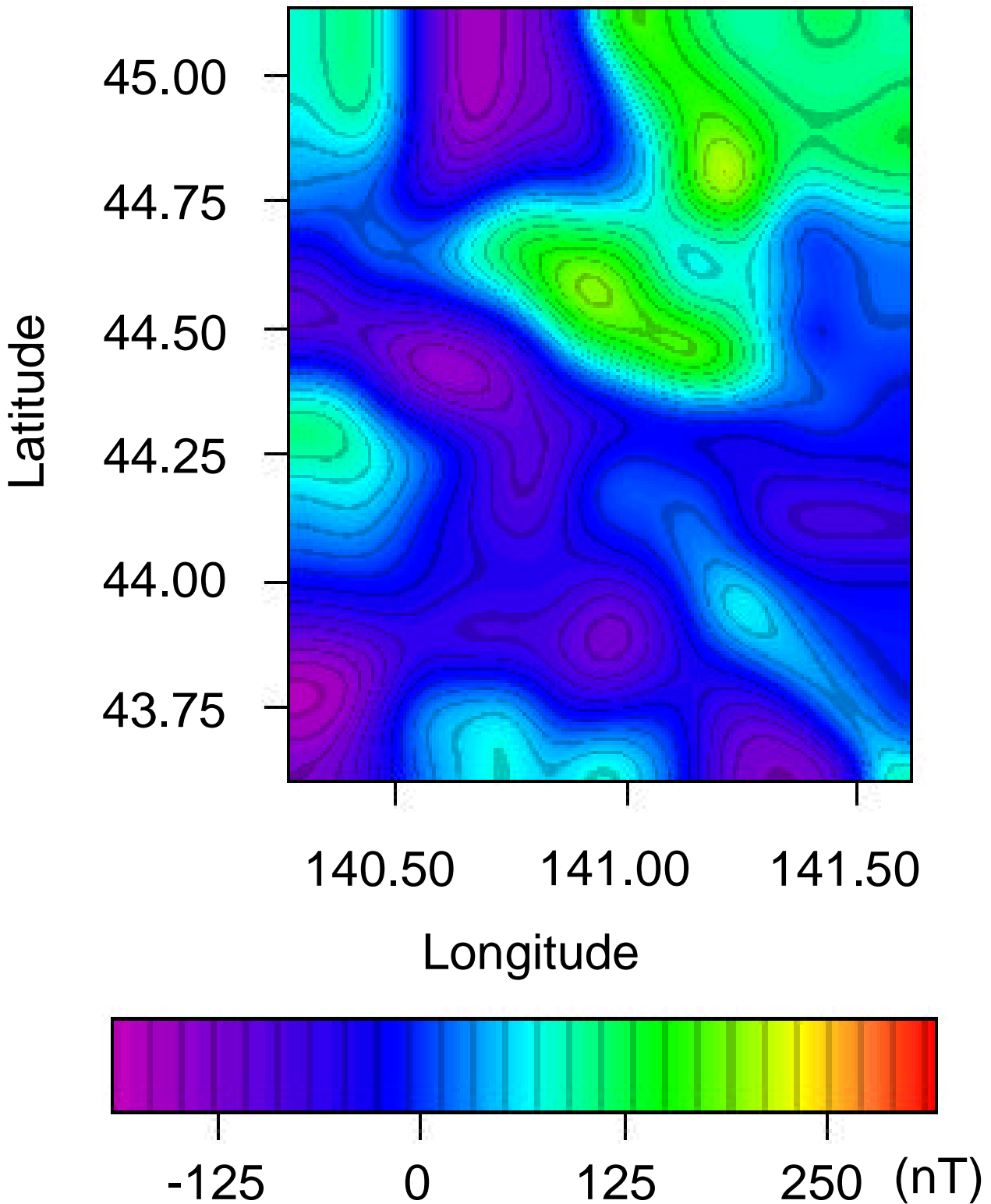
**Fig. 2 Geomagnetic Total Intensity Anomaly Map,
Offing of Rumoi - Okusiri.**



**Fig. 3 Geomagnetic Total Intensity Anomaly Map,
Offing of Kusiro.**



**Fig. 4 Geomagnetic Total Intensity Anomaly Map,
Around Hatizyo Sima.**



**Fig. 5 Geomagnetic Total Intensity Anomaly Map,
Offing of Rumoi - Okusiri (Part 2).**