



# HOKKAIDO UNIVERSITY

|                  |                                                                                   |
|------------------|-----------------------------------------------------------------------------------|
| Title            | 目次（英語）・奥付・裏表紙                                                                     |
| Citation         | 北海道大学地球物理学研究報告, 73                                                                |
| Issue Date       | 2010-03-19                                                                        |
| Doc URL          | <a href="https://hdl.handle.net/2115/56620">https://hdl.handle.net/2115/56620</a> |
| Type             | other                                                                             |
| File Information | 73_26_backcover.pdf                                                               |



# GEOPHYSICAL BULLETIN OF HOKKAIDO UNIVERSITY

No.73, March 2010

|                                                            |   |
|------------------------------------------------------------|---|
| Special Issue for Strong Motion Symposium in Sapporo ..... | v |
| Tsutomu SASATANI                                           |   |

## Papers

|                                                                     |   |
|---------------------------------------------------------------------|---|
| Historical Change of Social Activities in Japanese Seismology ..... | 1 |
| Masayuki TAKEMURA                                                   |   |

|                                                                                                                    |    |
|--------------------------------------------------------------------------------------------------------------------|----|
| Source Characteristics of the 2006 Oita-Chubu Earthquake ( $M_J$ 6.2)<br>Occurred in the Philippine Sea Slab ..... | 23 |
| Hideki NAGUMO                                                                                                      |    |

|                                                                                                                       |    |
|-----------------------------------------------------------------------------------------------------------------------|----|
| A study of Liquefaction Potential in a Wide Area using<br>an Engineering Geomorphologic Classification Database ..... | 37 |
| Akio YAMAMOTO, Yasushi KOMARU, Masahiro YOSHIMURA<br>and Makoto YAMAGUCHI                                             |    |

|                                                                                                                       |    |
|-----------------------------------------------------------------------------------------------------------------------|----|
| Evaluation of the long-period ground motion characteristics<br>in Tokyo Bay area using the deep earthquake data ..... | 49 |
| Tomiichi UETAKE                                                                                                       |    |

|                                                                                                                                                        |    |
|--------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| Analyses of Strong Ground Motions from Intralab Earthquakes Using<br>High-Density Observation Network Data: Relation to the Island Arc Structure ..... | 57 |
| Yasumaro KAKEHI, Yusuke SAIJO and Kazuhiro SOMEI                                                                                                       |    |

|                                                                                               |    |
|-----------------------------------------------------------------------------------------------|----|
| Short-period Spectral Level of the Intra-slab Earthquakes<br>from Strong Motion Records ..... | 71 |
| Takashi IKEDA                                                                                 |    |

|                                                                                                               |    |
|---------------------------------------------------------------------------------------------------------------|----|
| Strong motion studies and their influence on input motions<br>for seismic design of building structures ..... | 87 |
| Kenichi KATO                                                                                                  |    |

|                                                                                                                                |     |
|--------------------------------------------------------------------------------------------------------------------------------|-----|
| Discussion about strong ground motion research and data processing based<br>on examinations of the 1923 Kanto earthquake. .... | 101 |
| Takafumi MOROI and Masayuki TAKEMURA                                                                                           |     |

|                                                                                              |     |
|----------------------------------------------------------------------------------------------|-----|
| Scaling relations of earthquakes on active mega-fault systems .....                          | 117 |
| Shinichi MATSUSHIMA, Satoko MUROTANI, Takashi AZUMA,<br>Kojiro IRIKURA and Sadayuki KITAGAWA |     |

|                                                                                                 |     |
|-------------------------------------------------------------------------------------------------|-----|
| Characterized Source Model of Intralab Earthquakes for Strong Ground<br>Motion Prediction ..... | 129 |
| Tomotaka IWATA and Kimiyuki ASANO                                                               |     |

|                                                                                                                                                                    |     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Source modeling and strong motion simulation of the 2009 Suruga Bay earthquake ( $M_{MA}$ 6.5) using the empirical Green's function method .....                   | 137 |
| Kimiya ASANO and Tomotaka IWATA                                                                                                                                    |     |
| A New Attenuation Relation of Seismic Intensity for Japan Based on Recent Strong-Motion Records .....                                                              | 149 |
| Nobuyuki MORIKAWA, Tatsuo KANNO, Akira NARITA, Hiroyuki FUJIWARA and Yoshimitsu FUKUSHIMA                                                                          |     |
| Microtremor Array Survey in the Northwestern Part of the Ishikari Plain .....                                                                                      | 159 |
| Kunikazu YOSHIDA, Tsutomu SASATANI, Takahiro MAEDA, Nobuo TAKAI, Goro MIWADA, Daishiro OHATA, Dhakal Yadab Prasad, Hiroshi KAGAMI and Raafat El-Shafei Fat-Helbary |     |
| An Improvement to the Phase Decomposition Analysis of Seismic Vertical Array Records .....                                                                         | 175 |
| Kunikazu YOSHIDA                                                                                                                                                   |     |
| Incorporation of Anelastic Attenuation Effects in Synthetic Seismograms for Transversely Isotropic Media .....                                                     | 185 |
| Hiroshi TAKENAKA and Takeshi NAKAMURA                                                                                                                              |     |
| A study on nonlinear site response appeared on strong ground motions during the 2003 Tokachi-oki earthquake .....                                                  | 195 |
| Goro MIWADA, Nobuo TAKAI, Gaku SHIMIZU, Tsutomu SASATANI, Takahiro MAEDA and Akio YAMAMOTO                                                                         |     |
| Mobile Observation in a History of Strong-Motion Measurement .....                                                                                                 | 207 |
| Kazuyoshi KUDO                                                                                                                                                     |     |
| Anomalous strong ground motion features of the largest aftershock of the 2003 Tokachi-oki earthquake .....                                                         | 217 |
| Takahiro MAEDA, Nobuo TAKAI and Tsutomu SASATANI                                                                                                                   |     |
| Ground motion characteristics of 2007 Niigata-ken Chuetsu-oki earthquake .....                                                                                     | 229 |
| Katsuichiro HIKATA                                                                                                                                                 |     |
| Estimation of Amount of Intrusive Magma by Using Volumetric Strain Data and Attempt of Evaluation of Volcanic Activity in Izu-Tobu Volcanoes .....                 | 239 |
| Jun'ichi MIYAMURA, Hiroshi UENO and Takashi YOKOTA                                                                                                                 |     |
| Application of wavelet transform to EQ-echo records and its effect .....                                                                                           | 257 |
| Haruyuki YAMASHITA, Tomonori WATANABE, Takeo MORIYA and Toru MOGI                                                                                                  |     |

|                                                                                                                                                                                                                                           |     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Heat accumulation beneath Tokachidake volcano as inferred<br>from magnetic changes .....                                                                                                                                                  | 269 |
| Takeshi HASHIMOTO, Mitsuharu NISHIMURA, Shin ARITA,<br>Teruaki YAMAMOTO, Masashi OGISO, Nobuaki SHIGENO,<br>Noritoshi OKAZAKI and Tohru MOGI                                                                                              |     |
| Three-dimensional resistivity structure around the 62-II crater<br>at Tokachidake volcano .....                                                                                                                                           | 281 |
| Yusuke YAMAYA, Takeshi HASHIMOTO, Toru MOGI, Makoto MURAKAMI,<br>Noritoshi OKAZAKI, Mitsuhiro YOSHIMOTO, Yuji FUSHIYA,<br>Masaki HASHIMOTO, Teruaki YAMAMOTO,<br>Mitsuharu NISHIMURA, Makoto ARITA,<br>Atsushi MATOBA and Ryohei TSUCHIYA |     |

2010年3月15日印刷  
2010年3月19日発行

〔非 売 品〕

編集兼 北海道大学大学院理学研究院  
発行者 自然史科学部門（地球物理学）

印刷所 札幌市中央区南11条西9丁目3-35  
北海道印刷企画株式会社  
TEL(TEL)562-0075

# GEOPHYSICAL BULLETIN OF HOKKAIDO UNIVERSITY

No.73, March 2010

Special Issue for Strong Motion Symposium in Sapporo

( Journal of The Faculty of Science  
Hokkaido University  
Series VII (Geophysics)  
has been included in this volume. )

Published by  
Department of Natural History Sciences (Geophysics),  
Graduate School of Science,  
Hokkaido University, Sapporo, Japan