International Symposium

Crustal Dynamics (ISCD-2): Toward Integrated View of Island Arc Seismogenesis

1-3 March, 2019, Uji, Japan

Program

Oral Session

March 1st (Fri.)

9:30		Opening
9:45	A01	Stress and Strength in the Seismogenic Zones in the Japanese Islands Toru MATSUZAWA*
10:00	A02	Earthquake Activities Induced by the 2011 Tohoku-Oki Earthquake Related to the Heterogeneities in Stress and Strength in the Tohoku District Keisuke YOSHIDA*, Akira HASEGAWA, Takeyoshi YOSHIDA, Toru MATSUZAWA
10:15	A03	Stress Field in the Aftershock Area of the 2016 Central Tottori Prefecture Earthquake Yoshihisa IIO*, Satoshi MATSUMOTO, Shinichi SAKAI, Aitaro KATO
10:30	A04	Estimation of Heterogeneity of Stress Field by Using Misfit Angles in Focal Mechanisms Yohei YUKUTAKE*, Yoshihisa IIO
10:45	A05	A Bayesian Estimation of a Focal Mechanisms Based on the Spatial Stress Pattern Inferred From a P wave first-motion dataset Takaki IWATA*
11:00	A06	(INVITED) Seismic Anisotropy and its Relation to Stress and Strain in the Crust Martha SAVAGE*, Hubert ZAL, Kenny GRAHAM, Yosuke AOKI
11:30	A07	Stress and Strength Control on Complex Rupture of the 2016 Kaikoura, New Zealand Earthquake from Seismic Observation T. OKADA*, T. SATO, Y. IIO, S. MATSUMOTO, S. BANNISTER, J. RISTAU, S. OHMI, M. MATSUNO, T. MIURA, M. SAVAGE, J. PETTINGA, F. GHISETTI R. H. SIBSON
11:45	A08	(INVITED) Thermo-mechanical Properties of the Seismogenic Crust in Southern California Egill HAUKSSON*
12:15	A09	Modeling and Estimating the 3D Absolute Stress Field Using Earthquake Focal Mechanism Solutions Toshiko TERAKAWA*, Egill HAUKSSON
12:30		Discussion
12:45 ~	13:45	Lunch

13:45		Introduction of the session Takeshi SAGIYA
13:55	A10	(INVITED) Lessons for Subduction Yone Earthquakes from GPS, Repeating Earthquakes, and Physics-based Models Paul SEGALL*, Kaj JOHNSON, Camilla CATTANIA
14:25	A11	Formation of Island Arc-Trench System due to Plate Subduction on the Basis of Elastic Dislocation Theory Yukitoshi FUKAHATA*, Mitsuhiro MATSU'URA
14:45	A12	Resolution of Inelastic Crustal Deformation in the Japanese Inland and its Tectonic Implications Takeshi SAGIYA, Angela MENESES-GUTIERREZ, Xuelei ZHANG, Koki KUMAGAI
15:05	A13	Lessons from Crustal Responses to Co- and Inter-seismic Stress Disturbances: Japan and SW Taiwan Youichiro TAKADA, Tomomi INAMATSU, Kotaro TSUKAHARA,
		Takeshi SAGIYA, Takuya NISHIMURA, Kuo-En CHING
15:25		Coffee break
15:40	A14	(INVITED) Luminescence Thermochronometry and the Evolution of Mountains, Climate and Tectonics
		Frédéric HERMAN, Georgina E. KING
16:10	A15	Long-term Uplift-denudation of the Japan Arc Revealed by Low-temperature Thermochronology Takahiro TAGAMI, Shigeru SUEOKA
16:30		Discussion
16:45 ~ 18	8:15	Poster Session
18:30 ~		Reception
		March 2 nd (Sat.)
9:10	B16	(INVITED) Fluid-triggered High-speed Deformation at Different Levels of the Continental Crust: Evidences from Paleo-earthquake Proxies Marco HERWEGH*, Alfons BERGER
9:40	B17	Development of the Median Tectonic Line, Mie Prefecture, South-West Japan: A Possible Interpretation for Strain Localization and Softening Toru TAKESHITA, Dong Van BUI, Thomas CZERTOWICZ, Shun ARAI, Takafumi YAMAMOTO*, Jun-Ichi ANDO, Norio SHIGEMATSU, Koichiro FUJIMOTO
10:00		Introduction to two poster presentations (P19 and P20) on the studies of the Median Tectonic Line in the eastern Kii Peninsula, SW Japan Norio SHIGEMATSU*
10:10	B18	Fracturing of Plagioclase Grains: Roles for Deformation Mechanism and Fluid Pathway at Lower Crust Yusuke SODA*, Takamoto OKUDAIRA
10:25	B19	Distribution and Development Process of Faults Retrieved from Aftershock Areas of the 2000 Western Tottori Earthquake Hideki MUKOYOSHI*, Hideto UCHIDA, Kenta KOBAYASHI, Satoshi TONAI, Shunya KANEKI, Tetsuro HIRONO

10:40		Coffee break
10:55	B20	Heterogeneous Seismic Activity in Focal Area of the 2000 Western Tottori EQ (M7.3) Detected by "0.1 manten" Hyper Dense Seismic Observation Satoshi MATSUMOTO*, Shinichi SAKAI, Aitaro KATO, Yoshihisa IIO
11:15	B21	Spatio-temporal Evolution of Micro-Earthquakes Illuminated by "0.1 manten" Hyper Dense Seismic Observation: Implication of Fault Growth Aitaro KATO*, Shinichi SAKAI, Satoshi MATSUMOTO, Yoshihisa IIO
11:35	B22	(INVITED) Enhancing Slip Inversions via Joint Seismo-Geodetic Approaches: Examples from Anza and Parkfield, California Asaf INBAL*
12:05		Discussion
12:10 ~ 1	3:10	Lunch
13:10	B23	Crustal Strength across the Frictional to Plastic Zones: Laboratory Data, Theories, and Extrapolation to Nature Ichiko SHIMIZU*, B02 and Utrecht Groups, B01 MTL Research Group
13:30	B24	(INVITED) Physics of Fault Friction at low Shearing Velocities: From the Micro- to Meter Scale
		Christopher J. SPIERS*
14:00	B25	The Evolution of Fault-zone Rheology Kiyokazu OOHASHI*, Toru TAKESHITA, Ken-ichi HIRAUCHI
14:20	B26	The Origin of Macroscopic Friction between Single Crystal Mica Surfaces Hiroshi SAKUMA*, Kenji KAWAI, Ikuo KATAYAMA, Shigeru SUEHARA
14:40 ~ 14:50		Coffee break
14:50	B27	(INVITED) Diffusion Creep in Eclogites: Relationship Between Mineral Reactions and Deformation and Consequences for Crustal Weakening Holger STÜNITZ*, Kai NEUFELD, Ane FINSTAD, Jiri KONOPASEK, Renee HEILBRONNER, James MCKENZIE
15:20	B28	Rheological Weakening of the Lower Crustal Rocks Promoted by Anomalous Diffusion of Water
		Masanori KIDO*, Jun MUTO, Sanae KOIZUMI, Hiroyuki NAGAHAMA
15:40	B29	Persistent Deep Afterslip Driven by Nonlinear Transient Mantle Flow and Recovery of Coastal Subsidence after the 2011 Tohoku Earthquake Jun MUTO*, James D. P. MOORE, Sylvain BARBOT, Takeshi IINUMA, Yusaku OHTA, Syunsuke HORIUCHI, Hikaru IWAMORI
16:00		Discussion
16:10 ~ 1	8:00	Poster session
		March 3 rd (Sun.)
9:10	C30	Electromagnetic Mapping of Geofluids Using Wideband Magnetotellurics: Implications for Seismogenesis Yasuo OGAWA*, Masahiro ICHIKI
9:30	C31	High Resolution Shallow Crustal Structure of the Central Japan by Using Surface-wave Tomography

Hiro NIMIYA*, Tatsunori IKEDA, Takeshi TSUJI

9:50	C32	Fluid Distribution in the Crust – Inference from Seismic Velocity and Electrical Conductivity Tohru WATANABE*, Guillaume DESBOIS, Kenta YOSHIDA
10:10	C33	(INVITED) Preparation Zones for Large Crustal Earthquakes as a Consequence of Fault-Valve Activity
		Richard H. SIBSON*
10:40	C34	Researches for Flux Estimation and Continuous Monitoring of Slab-Derived Fluids Norio Matsumoto*, Kohei Kazahaya, Fumiaki Tsunomori, Noritoshi Morikawa
11:00	C35	A 3-D Crust and Uppermost Mantle Electrical Conductivity Model of Subduction Zone Beneath NE Japan
		Masahiro ICHIKI*, Toshiki KAIDA, Yasuo OGAWA
11:20	C36	Roles of Water in Subduction Zone Dynamics Hikaru IWAMORI*, Hitomi NAKAMURA, Atsushi NAKAO, Tatsuji, NISHIZAWA
11:40 ~ 12	:40	Lunch
12:40	C37	(INVITED) Study of Potential Biases in Seismologically Estimated Stress Drops of Microseismicity Using Dynamically Simulated Earthquake Sources Nadia LAPUSTA*
13:10	C38	Energy Budget of Earthquakes: Investigating the Relation Between Actual and Seismologically Inferred Quantities using Dynamic Simulations of Earthquake Sequences Valère LAMBERT*, Nadia LAPUSTA
13:25	C39	Timing of Earthquakes on Intraplate Active Faults: Earthquake Sequence Simulation Accounting for Stress Perturbation by Megathrust Earthquakes Hiroyuki NODA*
13:45	C40	Crustal Stress, Fault Geometry and Dynamic Rupture: Lessons Learned from Recent Earthquake Events Ryosuke ANDO*
14:05	C41	Rapid Mantle Flow with Power-law Creep Explains Transient Deformation Following the 2011 Tohoku-Oki Earthquake Ryoichiro AGATA*, Sylvain BARBOT, Kohei FUJITA, Mamoru HYODO, Takeshi IINUMA, Ryoko NAKATA, Tsuyoshi ICHIMURA, Takane HORI
14:25	C42	(INVITED) The Anatomy of Subduction Zone: Insight from Geodetic Imaging and Modeling Sylvain BARBOT*
14:55	C43	Viscoelastic Corrections of the Earthquake Cycle for Estimating Interplate Coupling along the Nankai Trough Takuya NISHIMURA*, Fred F. POLLITZ
15:15	C44	Modeling Deformation and Stress State of the Japanese Island Arc Crust Considering Heterogeneous Rheological Structure Bunichiro SHIBAZAKI*
15:35		Discussion
15:40		Coffee break
15:55		Discussion
17:45		Closing

Poster Session

P01	Naoki UCHIDA*, Aki ITO
P02	Cause of the Spatiotemporal Variation of the Earthquake Swarms in Wakayama Region, NW Kii Peninsula Japan
	Sumire MAEDA*, Makoto OTSUBO, Toru MATSUZAWA
P03	P-wave Polarity Determination of Waveform Data Observed in Western Japan, Using Deep Learning Shota HARA*, Yukitoshi FUKAHATA, Yoshihisa IIO
P04	Spatio-temporal Analysis of Seismic Anisotropy Associated with the Cook Strait and Kaikoura Earthquake Sequaence in New Zealand Kenny GRAHAM*, Martha SAVAGE, Richard ARNOLD
P05	Geological Background of Inland Earthquakes in the Norheast Japan Arc Takeyoshi YOSHIDA*
P06	Thermal Structure from Supporting Data for Regional Heat Flow Studies in and Around Japan Akiko TANAKA*
P07	Crustal Movement Acceleration Prior to the 2011 Tohoku-Oki Earthquake Yo KAWASHIMA*, Takeshi SAGIYA
P08	Three Dimensional GPS Velocities and Crustal Deformation in Colombia Sindy Carolina LIZARAZO*, Takeshi SAGIYA, H. MORA-PAEZ
P09	Intraplate Faulting, Stress Accumulation, and Shear Localization of a Crust-Upper Mantle System with Nonlinear Viscoelastic Rheologies Xuelei ZHANG*, Takeshi SAGIYA
P10	Non-linear Effects on Stress and Brittleness of Viscoelastic Fluids under Transient Deformation at Large Strain Rate Mie ICHIHARA*, Masaharu KAMEDA
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P11	Localized Strain Rate in Central and Northeast Japan Before and After the Tohoku-oki Earthquake Tomomi INAMATSU*, Youichiro TAKADA, Takeshi SAGIYA, Takuya NISHIMURA
P12	Elastic/inelastic Behavior of the Upper Crust by Geologic and Geodetic Explorations: Niigata High Strain Region (Central Japan) Makoto OTSUBO*, Takeshi SAGIYA
P13	Quantification of Strain Rate of Brittle Shear Zone in the High Strain-rate Zone, Central Japan Tomonori TAMURA*, Kiyokazu OOHASHI, Makoto OTSUBO, Ayumu MIYAKAWA, Masakazu NIWA
P14	Implication of Persistent Ductile Deformation in the Crust from Temporal Variation in coda Q in the Northeastern Part of the Niigata-Kobe Tectonic Zone, Central Japan Masanobu DOJO, Yoshihiro HIRAMATSU*
P15	Evaluation of Effects Related to Seamount Subduction on a Shallow Accretionary Prism off Muroto Using Ocean Drilling Cores and High Resolution Subbottom Profile Images Yuichi OKUMA*, Asuka YAMAGUCHI, Rina FUKUCHI, Hiroaki KOGE, Juichiro ASHI
P16	Revealing the Mountain Building Process of the NE Japan Arc Using Low-temperature Thermochronology: Preliminary Data of the North Area Shoma FUKUDA*, Shigeru SUEOKA, Noriko HASEBE, Akihiro TAMURA, Tomoaki MORISHITA, Takahiro TAGAMI

Uplift and Denudation History of the South Fossa Magna Region Using Low-temperature Thermochronometric Methods

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Yumi KOBAYASHI*, Shigeru SUEOKA, Shoma FUKUDA, Noriko HASEBE, Akihiro TAMURA, Tomoaki MORISHITA, Tagami TAGAMI

P18	Monazite Fission-track Dating Method: Development of Lower-temperature Thermochronometer Ai SHISHIKURA*, Etienne SKRZYPEK, Sean JONES, Ling CHUNG, Andy GLEADOW, Shigeru SUEOKA, Takahiro TAGAMI
P19	3D Fault Architecture Model along the Median Tectonic Line, Eastern Kii Peninsula, SW Japan Norio SHIGEMATSU*, Takuma KATORI, Jun KAMEDA, Ayumu MIYAKAWA
P20	Recent Studies along the Median Tectonic Line (MTL) in the Eastern Kii Peninsula, SW Japan Norio SHIGEMATSU*, Koichiro FUJIMOTO, Masao. KAMETAKA, Takamoto OKUDAIRA, Hiroshi MORI, Simon WALLIS
P21	Median Tectonic Line Outcrop at Takamiyama in the Central Kii Peninsula, Japan Tomohiro IMORI, Koichiro FUJIMOTO*, Norio SHIGEMATSU
P22	Mineralogical and Geochemical Features of Cataclasites and Planar Fault Fouges along the Median Tectonic Line, in the Eastern Kii, SW Japan Chisaki INAOI, Jun KAMEDA*, Norio SHIGEMATSU, Tomoyuki OHTANI
P23	Deformation Overprint During the Development of the Median Tectonic Line Fault Zone in Mie Prefecture, Southwest Japan: Evidences for Strain Localization Dong Van BUI*, Toru TAKESHITA, Shun ARAI, Takafumi YAMAMOTO, Jun-Ichi ANDO
P24	An Introduction to Ryoke Cataclasite Rocks in Tsukide, Mie Prefecture, Japan: An Approach Using 3D Reconstructions from Thin Sections Thomas Jing-Yi YEO*, Toru TAKESHITA
P25	The Role of Pressure Solution Creep on Frictional Healing of Quartz Gouge Naoki NISHIYAMA*
P26	Formation and Development of Lower Crustal Shear Zones: A Petrological Perspective Takamoto OKUDAIRA*, Yusuke SODA
P27	Regional Variations in Mineralogical Characteristics of Fault Rocks Retrieved from Aftershock Areas of the 2000 Western Tottori Earthquake Shunya KANEKI*, Tetsuro HIRONO, Hideki MUKOYOSHI, Kenta KOBAYASHI, Toru TAKESHITA
P28	Microstructure of Fault Zone That Slipped at the Aftershock of M5.5 Orkney Earthquake Yuki YOKOYAMA*, Shunya KANEKI, Yasuo YABE, Hiroshi OGASAWARA
P29	Low- to High-velocity Frictional Properties and Microstructure Evolution of Volcaniclastic Sediments Akari FUKE*, Tetsuro HIRONO, Shunya KANEKI
P30	Estimation of Difference Stress Value Using Residual Strain of Quartz in Deformed Conglomerate and Inhomogenous Strain of Conglomerate Layer -An Example of Multiple Collision Zone of Izu-Bonin arc, Hamaishidake Formation, Central Japan-Shun SUZUKI*, Kenta KOBAYASHI
P31	Description of Itoigawa-Shizuoka Tectonic Line Outcrop Exposed during Repair Work of Fossa Magna Park, Itoigawa, Niigata Prefecture, Central Japan Keita TAKAHASHI*, Shun SUZUKI, Kenta KOBAYASHI, Kou TAKENOUCHI, Makoto OHKOUCHI
P32	Kinematic and Chemical Processes in the Aftershock Area and the Neighboring Area of the 2000 Tottori- ken Seibu Earthquake, Japan Kenta KOBAYASHI*, Shun SUZUKI, Hideki MUKOYOSHI, Tetsuro HIRONO
P33	The Spatiotemporally Change of the Stress Condition around Hinagu Fault Zone through the 2016 Kumamoto Earthquake Sequence, Central Kyushu, Japan

Ayaho MITSUOKA*, Satoshi MATSUMOTO, Azusa SHITO, Yusuke YAMASHITA
Manami NAKAMOTO, Masahiro MIYAZAKI, Shinichi SAKAI, Yoshihisa IIO,
Group for urgent joint seismic observation of the 2016 Kumamoto earthquake

P34	Non-double Couple Micro-earthquakes in the Focal Area of the 2000 Western Tottori earthquake (M7.3) by "0.1 manten" Hyper Dense Seismic Observation Yuto HAYASHIDA*, Satoshi MATSUMOTO, Yoshihisa IIO, Shinichi SAKAI, Aitaro KATO, Group of "0.1 manten" hyper dense seismic observation
P35	Seismological Imaging Using S-wave Reflection Analysis and Receiver Function Analysis about the Fault Zone Extending to the Lower Crust Shinya KATOH*, Yoshihisa IIO, Takuo SHIBUTANI, Hiroshi KATAO, Masayo SAWADA, Kazuhide TOMISAKA
P36	Strength Profile of The Median Tectonic Line Fault Zone Determined by High-Pressure and -Temperature Experiments Miki TAKAHSHI*, Chisaki INAOI, Jun KAMEDA, Hiroshi SAKUMA, Norio Shigematsu
P37	The Role of Metasomatic Alteration on Frictional Behavior of Subduction Thrust Faults at Seismogenic Depths Ken-ichi HIRAUCHI*, Yuzuru YAMAMOTO, Sabine A. M. DEN HARTOG, André R. NIEMEIJER
P38	Effects of Temperature on Frictional Strength of Rocks in an Argon Atmosphere Yuki YOKOYAMA, Michiyo SAWAI*, Kyuichi KANAGAWA
P39	Nanocrystalline Principal Slip Zones Berend Antonie VERBERNE*, Oliver PLÜMPER
P40	First-Principles Investigation for Frictional Characteristics of Brucite and its Application for Macroscopic Frictional Characteristics of Sheet-Structure Minerals Hanaya OKUDA*, Kenji KAWAI, Hiroshi SAKUMA, Ikuo KATAYAMA
P41	Microstructural Development and Strain Partitioning in Experimentally-sheared Granitic Rocks at Brittle Ductile Transition Zone Shun ARAI*, Jun MUTO, Masanori KIDO
P42	Dislocation Creep of Orthoenstatite Aggregates under High Pressure and Temperature Conditions Yumiko TSUBOKAWA*, Tomohiro OHUCHI, Yuji HIGO, Yoshinori TANGE, Tetsuo IRIFUNE
P43	Dynamically Recrystallized Microstructures of Quartz in the Sanbagawa Metamorphic Belt, Shikoku, Japan Tadamasa UEDA*, Ichiko SHIMIZU
P44	Spatial and Temporal Variation of Seismic Velocity in the Japanese Island Takeshi TSUJI*, Tatsunori IKEDA
P45	Sintering of Polycrystalline Clinopyroxene and Ultrasonic Velocity Measurements under High P-T Conditions Yumiko TSUBOKAWA*
P46	Laboratory Measurements of Vp, Vs, and Vp/Vs for Polycrustalline Labradorite up to 800°C and 1GPa Satoko HONDA*, Masahiro ISHIKAWA
P47	Magnetotelluric Imaging of Kitakami Mountains, Forearc of NE Japan, in Sereach for Water Wall Masato FUKAI, Yasuo OGAWA*, Kuo-Hsuan TSENG, Masahiro ICHIKI, Shinichi TAKAKURA
P48	Comparison of Permeability of Fault Zone Between In-situ Hydraulic Tests and Laboratory-Derived Data at the Median Tectonic Line, Central Japan Norio MATSUMOTO*, Norio SHIGEMATSU

Estimation of Magmatic Water Content in Saline Groundwater in Tohoku district, Japan

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Yoko S. TOGO*, Kohei KAZAHAYA, Masaaki TAKAHASHI, Yuki TOSAKI, Noritoshi MORIKAWA, Hiroshi A. TAKAHASHI, Tsutomu SATO, Keika HORIGUCHI

P50	Chlorine Rich Prograde Mineral Assemblage Observed in Diamond-Bearing Garnet Peridotite from the Qianghai Province, NW CHINA Kosuke NAEMURA*
P51	Saline Fluid Inclusions in Pinatubo Mantle Xenoliths Linking Subducted Seawater to Arc Magmas Tatsuhiko KAWAMOTO*, Jun-Ichi KIMURA, Qing CHANG, Masako YOSHIKAWA, Mitsuru OKUNO, Tetsuo KOBAYASHI
P52	Quantitative Relationship between Aseismic Migration Speed and Frictional Properties Keisuke ARIYOSHI*, Jean-Paul Ampuero, Roland Bürgmann, Toru MATSUZAWA, Akira HASEGAWA, Ryota HINO, Takane HORI
P53	Modulation of Fault Strength during the Seismic Cycle by Grain-size Evolution around Contact Junctions Sylvain BARBOT*
P54	Quasi-static Simulation of Earthquake Cycles in the Nankai Trough, Southwest Japan, Based on Finite Element Modeling Ryoichiro AGATA*, Takane HORI, Kohei FUJITA, Mamoru HYODO, Tsuyoshi ICHIMURA
P55	Coulomb Stress Change of Inland Faults during a Megathrust Earthquake Cycle in Southwest Japan Tsukasa MITOGAWA*, Takuya NISHIMURA
P56	Dense GNSS Observation in the San-in Shear Zone After the 2011 Tohoku-oki Earthquake Angela MENESES-GUTIERREZ*, Takuya NISHIMURA
P57	Revisiting the Coseismic Slip Distribution of the 2011 Tohoku-oki Earthquake Considering Early Postseismic Deformation and Heterogeneous Structure Takeshi IINUMA*, Ryoichiro AGATA, Yusaku OHTA, Ryota HINO, Takane HORI
P58	Mechanism of Interseismic Subsidence of the Northeast Japan Forearc During the Late Period of a Gigantic Earthquake Cycle Ryohei SASAJIMA*, Bunichiro SHIBAZAKI, Hikaru IWAMORI, Takuya NISHIMURA
P59	Modeling Absolute Stress Fields in the Hanging Wall of the Northeast Japan Forearc Before and After the 2011 Tohoku Earthquake Ryohei SASAJIMA*, Bunichiro SHIBAZAKI, Hikaru IWAMORI, Keisuke YOSHIDA
P60	Constructing A New Locking Model for the Southern Kurile Trench Including Viscoelastic Relaxation and Upper Plate Deformation Yuji ITOH*, Takuya NISHIMURA, Kelin WANG, Jiangheng HE, Tianhaozhe SUN
P61	Numerical Simulations of Tsunamis at Hypothetical Megathrust Earthquakes Shion OSADA*, Tetsuro HIRONO, Shoichi YOSHIOKA, Toshitaka BABA
P62	History of Crustal Deformation and Estimated Earthquake Recurrence Along the Sagami Trough Junki KOMORI*, Ryosuke ANDO, Masanobu SHISHIKURA