

**16<sup>th</sup> International Workshop on WATER DYNAMICS**  
**Fluids in the Earth -Mysterious but Valuable Things-**

Venue: Graduate School of Environmental Studies, New Aobayama Campus, Tohoku University

<b>Tuesday, March 11th, 2019</b>	
PM	Lab Tour (N. Watanabe & A. Okamoto)

<b>Tuesday, March 12th, 2019 (Lecture Room)</b>				
Time	No.	Speaker	Title	Chairman
<b>Opening</b>				
9:15-9:20		Noriyoshi Tsuchiya	WS Framework	
9:20-9:25		Noriaki Watanabe	Safety Information	
<b>Hydrothermal and Supercritical Research</b>				
9:25-9:45	1	Noriyoshi Tsuchiya	Frontier Research "Crustal Energy in Island Arc"	<b>N. Tsuchiya</b>
9:45-10:15	2	Noriaki Watanabe	Hydraulic fracturing of granite in superhot geothermal environments	
10:15-10:30	<b>Break</b>			
10:30-11:00	3	Atsushi Okamoto	Hydrothermal experiments on supercritical water-rock interaction: thermodynamic data and silica	<b>N. Tsuchiya</b>
11:00-11:20	4	Kenta. Yoshida	Chemical analysis of a tiny fluid inclusion by FIB-microsampling and cryo-FIB observation	
11:20-11:50	5	Oliver Plümpner	Quantifying non-hydrostatic, reaction-induced stresses during metamorphic hydration reactions	
<b>Poster Session &amp; Lunch</b>				
<b>Role of Water for Earthquake and Metamorphism</b>				
13:30-14:00	6	Stephen Francis Cox	Injection-driven failure and the dynamics of fluid migration in intrusion-related hydrothermal systems: insights from coupled hydro-mechanical simulations	<b>A. Okamoto</b>
14:00-14:30	7	Richard H. Sibson	Dual-Driven Fault Failure Accompanying Fault-Valve Activity	
14:30-15:00	8	Tomomi. Okada	Seismic imaging of inland and intraplate earthquake swarms after the 2011 Tohoku-Oki M9 intraplate earthquake: seismic bright spot and seismic low-velocity area as evidences for fluid-driven seismicity	
15:00-15:30	9	Masaoki. Uno	Crustal fluid pressure gradients and permeability estimated from fluid-rock reaction zones	
15:30-15:45	<b>Break</b>			
<b>New Tech for Geothermal</b>				
15:45-16:15	10	Viacheslav Spichak	Temperature models of geothermal areas: lessons learned from electromagnetic geothermometry	<b>N. Watanabe</b>
16:15-16:45	11	Svetlana Bortnikova	Evidences of PGE mineralization at Mutnovsky volcano (hydrochemical and mineralogical data)	
16:45-17:15	12	Nataliya Yurkevich	The formation of the thermal waters composition at the modern active volcanoes on the example of Golovnin caldera (Kunashir, Kuril Islands)	
17:15-17:35	13	M. Nakagawa	Applications of Nanobubbles in Geothermal Resource Development	
18:00	<b>Workshop Banquet</b>			

### Wednesday, March 13th, 2019 (Lecture Room)

Time	No.	Speaker	Title	Chairman
<b>ABM and Social Acceptance</b>				
9:00-9:30	14	Vanesa Lo Iacono Ferreira	An integrated perspective of the influence of water resource from a Life Cycle view with Agent-based modeling	N. Tsuchiya
9:30-10:00	15	Bahr Kyle Steven	The Social Reservoir: Mining Social Media for Sentiment Analysis and Issue Detection	
<b>High Pressure Regime</b>				
10:05-10:35	16	Tony Withers	Water in the mantle: where is it?	M. Uno
10:35-11:05	17	Zhenmin Jin	Water or melts within the stagnant slab of mantle transition zone in Eastern China	
11:05-11:15	<b>Break</b>			
11:15-11:45	18	Vladimir G. Malkovets	Mantle metasomatism and diamonds in the Siberian cratonic lithosphere	M. Uno
11:45-12:15	19	Vladislav S. Shatsky	Alluvial diamonds from northeast of Siberia craton: evidence for formation in subduction environment	
12:15-12:45	20	Eiji Ohtani	Hydrogen in the lower mantle and core-mantle boundary region	
<b>Lunch &amp; Poster Session</b>				
<b>Geofluids</b>				
13:40-14:10	21	Sergei Skuzovatov	The role of water and H <sub>2</sub> O-rich fluids in geochemistry and metamorphic recrystallization of high-pressure rocks of SW Mongolia	N. Tsuchiya
14:10-14:40	22	Tetsuo Kawakami	Brine flow along large scale thrusts in continental collision zones	
14:40-15:10	23	Fumiko Higashino	Passage and possible origin of brine in the middle to lower crust	
15:10-15:40	24	Tatsuro Adachi	Exsolution textures triggered by retrograde hydration process	
15:40-15:50	<b>Break</b>			
<b>Tsunami and Life</b>				
15:50-16:20	25	Kazuhiya Goto	Tsunami boulders as a tool for evaluating tsunami size	K. Nakamura
16:20-16:50	26	Witold Szczucinski	New challenges in studies on tsunami deposits and environmental impacts from tsunami	
16:50-17:20	27	Takeshi Komai	Data-driven Analysis on Geochemical Features of Paleo-tsunami Deposits	
17:20-17:50	28	Shin-ichiro Nomura	Cell-sized molecular robot: under construction, and beyond	

### Thursday, March 14th, 2019 (Lecture Room)

Time	No.	Speaker	Title	Chairman
9:00-9:30	29	Jun-ichiro Ishibashi	Pore fluid geochemistry beneath active hydrothermal fields in the Okinawa Trough	T. Kakegawa
9:30-10:00	30	Tatsuo Nozaki	Long-term monitoring of the deep-sea artificial hydrothermal vent with in-situ experiment of mineral precipitation	
10:00-10:30	31	Yutaro Takaya	Sub-seafloor hydrothermal mineralization process in the Izena Hole, middle Okinawa Trough	
10:30-11:00	32	Shinsuke Kawaguchi	Origins of methane in high-temperature hydrothermal fluids at Okinawa Trough	
11:00-11:30	33	Takeshi Kakegawa	Organic matter around Miocene Kuroko ore deposits: Implications to Archean submarine hydrothermal microbial community	

### Thursday, March 14th - Friday, March 15th, 2019 (Field Excursion)

Matsukawa Geothermal power plant and Osawa hot spring  
Central Part of Iwate Prefecture