List of publications

Refereed Journals

[1] Competition between Crystalline Electric Field Singlet and Itinerant States of $f$ Electrons

[2] Spin, Charge, and Quasi-Particle Gaps in the One-Dimensional Kondo Lattice with $f^2$ Configuration


[5] Anisotropy and Pressure Dependence of the Upper Critical Field of the Ferromagnetic Superconductor UGe$_2$


[7] Nonmagnetic Insulating States near the Mott Transitions on Lattices with Geometrical Frustration and Implications for $\kappa$-(ET)$_2$Cu$_2$(CN)$_3$
Refereed Journals (continued)

[8] Absence of Unit-Cell Doubling in Nonmagnetic Insulator Phase on Two-Dimensional Lattice with Geometrical Frustration


[10] Thermodynamic Relations in Correlated Systems


[12] What is Minimal Model of $^3$He Adsorbed on Graphite?
-Importance of Density Fluctuations in 4/7 Registered Solid-


[14] On Proximity of 4/7 Solid Phase of $^3$He Adsorbed on Graphite
-Origin of Specific-Heat Anomalies in Hole-Doped Density-Ordered Solid-
Selected as “Papers of Editor’s Choice”
Refereed Journals (continued)

[15] Valence Fluctuations Revealed by Magnetic Field and Pressure Scans: Comparison with Experiments in YbXCu$_4$ (X=In, Ag, Cd) and CeYIn$_5$ (Y=Ir, Rh)  
Refereed Proceedings of International Conferences

[16] Ground State and Elementary Excitations in the One-Dimensional $f^2$ Kondo Lattice Model


[18] Partial Ferromagnetism in a Two-Band Hubbard Model with Semimetallic Bands: Numerical Evidences and a Rigorous Result

[19] UGe$_2$: A Ferromagnetic Superconductor
   J. Flouquet, A. Huxley, I. Sheikin, N. Kernavanois, D. Braithwaite, E. Ressouche,

[20] Coupled Charge and Spin Fluctuations and Mechanism of Superconductivity in UGe$_2$ under Pressures

[21] A Scenario for Superconductivity of UGe$_2$ due to Coupled Charge and Spin Fluctuations

[22] Path-Integral Renormalization Group Method
   M. Imada, T. Mizusaki, and S. Watanabe:
Refereed Proceedings of International Conferences (continued)

[23] Tools for Studying Quantum Emergence near Phase Transitions
   M. Imada, S. Onoda, T. Mizusaki, and S. Watanabe:
   The International Conference in Highlights in Condensed Matter Physics in Salerno, Italy
   9-11, May 2003, eds. A. Avella, R. Citro, C. Noce, and M. Salerno, AIP Conference

[24] Quantum Valence Criticality and Superconductivity

   and Superconductivity

[26] Magnetic-Field Induced Quantum Critical Points of Valence Transition
   in Ce- and Yb-Based Heavy Fermions

Article

[27] Path integral renormalization group method
   No.9 pp.565-576.
Submitted Paper

[28] Enhancement of Nuclear Spin-Lattice Relaxation Rate and Spin Susceptibility due to Valence Fluctuations
   -Origin of Anomalously Enhanced Wilson Ratio in Ce and Yb Systems-
Invited Talks in International Conference

- 2009 August  International Conference on Quantum Criticality and Novel Phases 2009 (QCNP2009) (Dresden, Germany) (Invited)
  「Influence of Quantum Critical Point of First Order Valence Transition on Ce and Yb Based Heavy Fermions」
  Shinji Watanabe

  「Fluctuations near Quantum Critical Points of Valence Transition and Superconductivity」
  Shinji Watanabe

- 2005 February  The 9th APCTP Winter Workshop on Strongly Correlated Electron Systems (Phoenix Park, Korea) (Invited)
  「Algorithm of Path Integral Renormalization Group Method and its Application」
  Shinji Watanabe

  「Bandwidth- and Filling-Control Mott Transitions: Path Integral Renormalization Group Study」
  Shinji Watanabe
Awards

- 2000 March 14  Aoba Society for the Promotion of Science Award
- 2006 March 22  The 3rd ISSP Promotion of Research Award
  (http://www.issp.u-tokyo.ac.jp/contents/week/news/oshirase200600322.html)

Competitive Grants

- Grant-in-Aid for Scientific Research  Wakate B  2003 April-2006 March
  「Study of strongly-correlated electron systems by path integral renormalization
  group method」

- Grant-in-Aid for Scientific Research  Scientific Research on Priority Area
  2005 April-2010 March
  「Physics of New Quantum Phases in Superclean Materials」
  Core member of A01 group “Novel Quantum Fluid Phases by Control of Correlation”

- Grant-in-Aid for Scientific Research  Wakate B  2006 April-2009 March
  「Clarification of electronic states near quantum critical point of valence transition」

- Grant-in-Aid for Scientific Research  Wakate B  2009 April-2012 March
  「Clarification of quantum phenomena of critical end point of first-order transition
  in quantum degeneracy regime and their influences」

Press Release

The results on emergence of quantum liquid state in the two-dimensional Helium 3 in
[14] On Proximity of 4/7 Solid Phase of \(^3\)He Adsorbed on Graphite
-Origin of Specific-Heat Anomalies in Hole-Doped Density-Ordered Solid-
was introduced on the front page of the Science News Paper on 2009 April 10.
This paper has been also selected as Papers of Editor’s Choice in the committee of
Journal of Physical Society of Japan, which has been introduced in News & Comments
as a notable paper.
This paper has been also introduced in Notable Papers in Recent JPSJ in BUTSURI
Vol.64, No.6, p235.
Oral Presentation in International Conference

- 2009 July  International Workshop on New Developments in Theory of Superconductivity (NDTS09), (ISSP, Kashiwa)
  「Superconductivity and Novel Phenomena Emerging near Quantum Critical Point of Valence Transition」
  Shinji Watanabe, Kazumasa Miyake

- 2009 May  Mini Workshop on Heavy-Fermion Materials, (Tokyo Metropolitan University, Hachioji)
  「Influence of Quantum Critical Point of First Order Valence Transition on Ce- and Yb-Based Heavy Fermions」
  Shinji Watanabe

- 2009 February  International Workshop on Supercomputing in Solid State Physics (SciSSP2009), (ISSP, Kashiwa)
  「The Nature of the Quantum Critical Point of the First-Order Valence Transition」
  Shinji Watanabe

  「Magnetic-Field Control of Quantum Critical Point of Isostructural First-Order Transition in Charge Degrees of Freedom」
  Shinji Watanabe, Atsushi Tsuruta, Kazumasa Miyake, Jacques Flouquet

- 2008 August  International Conference on Strongly Correlated Electron Systems 2008 (SCES2008) (Buzios, Brazil)
  「Magnetic-Field Induced Quantum Critical Points of Valence Transition in Ce- and Yb-Based Heavy Fermions」
  Shinji Watanabe, Atsushi Tsuruta, Kazumasa Miyake, Jacques Flouquet

- 2001 November  International Workshop on MATERIALS SIMULATION “Computational Science and Engineering” JSPS Research for the Future Program (Shonan Kokusai-Mura Center, Shonan)
  「Ground-State Properties of Two-Dimensional Hubbard Model with Geometrically Frustrated Structure」
  Shinji Watanabe, Masatoshi Imada
Oral Presentation in American Physical Society Meeting

- 2009 March  American Physical Society March Meeting (David L. Lawrence Convention Center in Pittsburgh)
  "Magnetic-Field Induced Quantum Critical Points of Valence Transition in Ce- and Yb-Based Heavy Fermions"

Shinji Watanabe, Atsushi Tsuruta, Kazumasa Miyake, Jacques Flouquet
Poster Presentation in International Conference

- 2008 November  The 2nd International Symposium on Anomalous Quantum Materials and the 7th Asia-Pacific Workshop (ISAQM2008 and The 7th APW) (Yasuda Auditorium, Univ. of Tokyo)
  「Quantum Spin Liquid in Two Dimensional Fermion Systems: Comparison between $^3$He and Electron Systems」
  Shinji Watanabe, Masatoshi Imada

- 2008 November  The 2nd International Symposium on Anomalous Quantum Materials and the 7th Asia-Pacific Workshop (ISAQM2008 and The 7th APW) (Yasuda Auditorium, Univ. of Tokyo)
  「Magnetic-field control of quantum critical point of isostructural first-order transition in charge degrees of freedom」
  Shinji Watanabe, Atsushi Tsuruta, Kazumasa Miyake, Jacques Flouquet

- 2008 August  International Conference “Frontiers of Low Temperature Physics” (ULT2008) (Royal Holloway, University of London)
  「Quantum Spin Liquid in Two Dimensional Fermion Systems: Comparison between $^3$He and Electron Systems」
  Shinji Watanabe, Masatoshi Imada

- 2008 August  International Conference “Frontiers of Low Temperature Physics” (ULT2008) (Royal Holloway, University of London)
  「Magnetic-Field Control of Quantum Critical Point of Isostructural First-Order Transition in Charge Degrees of Freedom」
  Shinji Watanabe, Atsushi Tsuruta, Kazumasa Miyake, Jacques Flouquet

  「Importance of Density Fluctuations in the 4/7 Phase of $^3$He Adsorbed on Graphite」
  Shinji Watanabe, Masatoshi Imada

- 2006 August  International Conference on Magnetism 2006 (Kyoto Kokusai Kaikan)
  「Quantum Valence Criticality and Superconductivity」
  Shinji Watanabe, Masatoshi Imada, Kazumasa Miyake
Poster Presentation in International Conference (continued)

- 2005 November  Joint Workshop on NQP-skutterudites and NPM in multi-approach
  (Tokyo Metropolitan University)
  「Electronic States near Quantum Critical Point of Valence Transition」
  Shinji Watanabe

- 2004 November  The 4th International Workshop on Novel Quantum Phenomena
  in Transition Metal Oxides and The 3rd Asia-Pacific Workshop on “Strongly Cor-
  related Electron Systems” (Sendai Information and Industrial Plaza)
  「Thermodynamic Relations in Correlated Electron Systems: Application to
  Mott Transition」
  Shinji Watanabe, Masatoshi Imada

- 2004 July  Japan-France seminar "Quantum complex systems" (ILL Grenoble)
  「Thermodynamic Relations in Correlated Electron Systems: Application to
  Mott-Transition Systems and Valence-Fluctuation Systems」
  Shinji Watanabe

- 2001 October  ISSP International Symposium "Correlated Electrons" (ISSP University
  of Tokyo)
  「A Scenario for Superconductivity of UGe₂ due to Coupled Charge and Spin
  Fluctuations」
  Shinji Watanabe, Kazumasa Miyake

- 2001 September  International Conference on Strongly Correlated Electrons with
  Orbital Degrees of Freedom (Sendai Kokusai Center)
  「Ferromagnetism in Semimetallic Systems」
  Shinji Watanabe, Koichi Kusakabe, Yoshio Kuramoto

- 2001 October  ISSP International Symposium "Correlated Electrons" (ISSP University
  of Tokyo)
  「Ground-State Properties of Two-Dimensional Hubbard Model with
  Geometrically Frustrated Structure」
  Shinji Watanabe, Masatoshi Imada

- 2001 August  Strongly Correlated Electron Systems 2001 (University of Michigan)
  「Partial Ferromagnetism in Semimetallic Systems: Numerical Calculation and
  Rigorous Proof」
  Shinji Watanabe, Koichi Kusakabe, Yoshio Kuramoto
Poster Presentation in International Conference (continued)

- 2000 November  International Symposium on New Developments in “Strongly Correlated Electron Phase under Multiple Environment” (Osaka University Icho Kaikan)
  「Partial Ferromagnetism in Semimetallic Hubbard Systems」
  Shinji Watanabe, Koichi Kusakabe, Yoshio Kuramoto

  「Ground State and Elementary Excitations in the One-Dimensional $f^2$ Kondo lattice Model」
  Shinji Watanabe, Yoshio Kuramoto
Invited Talk in Domestic Workshop

- 2009 March  Grant-in-Aid for Scientific Research on Innovative Areas 「Emergence of heavy electrons and their ordering」The first domestic meeting of “Heavy Electrons” (University of Tokyo)
  「Influence of quantum critical point of valence transition on Ce- and Yb-based heavy fermions」(Invited)
  Shinji Watanabe

- 2008 September  Kiken Workshop 「Thermal Quantum Field Theory and Their Applications」(Kiken, Kyoto University)
  「Negative sign problem in quantum Monte Carlo method and its overcome: Development of path integral renormalization group method」(Invited)
  Shinji Watanabe

- 2008 February  Scientific Research on Priority Area 「Molecular Conductors」Workshop by theory group (Yugawara-sou)
  「On the nature and origin of 2D quantum spin liquids —Comparison between electron and 3He systems」(Invited)
  Shinji Watanabe

- 2007 December  ISSP Workshop 「Development of computational material physics」(ISSP, University of Tokyo)
  「The Nature of Quantum Critical Points of Valence Transition —Fluctuations, Superconductivity and Magnetization Effects」(Invited)
  Shinji Watanabe

- 2007 August  JST CREST Workshop 「Perspective of magnetic science from theoretical viewpoint」(University of Tokyo)
  「Metal-insulator and magnetic transitions in quantum frustrate systems」(Invited)
  Shinji Watanabe

- 2007 June  Workshop 「Research of functions and structures of organic conductors and application of synchrotron radiation」(Spring-8)
  「Theoretical study of ground states of κ-ET systems」(Invited)
  Shinji Watanabe
Invited Talk in Domestic Workshop (continued)

- 2004 November Workshop 「New Development of Numerical Analysis in the 21st Century」 (Research Institute for Mathematical Sciences, Kyoto University)
  「Algorism of path integral renormalization group method and its application」 (Invited)
  Shinji Watanabe

- 2004 February Workshop for young scientists 「New trend of condensed matter physics」 (ISSP, University of Tokyo)
  「Development of new numerical algorism and its application」 (Invited)
  Shinji Watanabe

Lecturer

- 2008 August Scientific Research on Priority Area 「Physics of New Quantum Phases in Superclean Materials」 Summer school for young scientists (Atagawa heights)
  「Quantum spin liquid and novel critical phenomena near quantum critical point」
  Shinji Watanabe
Oral Presentation in Physical Society Meeting

- 2009 March  Physical Society of Japan, Area 8 (Rikkyo University)
  "Enhancement of Nuclear Spin-Lattice Relaxation Rate by Critical Valence Fluctuations"
  Shinji Watanabe, Kazumasa Miyake

- 2008 September  Physical Society of Japan, Area 6 (Iwate University)
  "On stability of the 4/7 phase of $^3$He adsorbed on graphite"
  Shinji Watanabe, Masatoshi Imada

- 2008 September  Physical Society of Japan, Area 8 (Iwate University)
  "Critical valence fluctuations induced by a magnetic field and their influences in Ce and Yb compounds"
  Shinji Watanabe, Kazumasa Miyake

- 2008 March  Physical Society of Japan, Area 6 (Kinki University)
  "Importance of density fluctuations in the 4/7 registered solid of $^3$He adsorbed on graphite"
  Shinji Watanabe, Masatoshi Imada

- 2007 March  Physical Society of Japan, Area 8 (Kagoshima University)
  "The nature of magnetic field control of valence transition and its critical point"
  Shinji Watanabe, Atsushi Tsuruta, Kazumasa Miyake

- 2006 March  Physical Society of Japan, Area 8 (Matsuyama University)
  "The critical nature of quantum critical points of valence transition and superconductivity"
  Shinji Watanabe, Masatoshi Imada, Kazumasa Miyake

- 2005 September  Physical Society of Japan, Area 8 (Doshisya University)
  "Electronic states near quantum critical points of valence transition"
  Shinji Watanabe

- 2004 September  Physical Society of Japan, Area 8 (Aomori University)
  "Derivation of thermodynamic relations which hold generally in correlated electron systems: Application to Mott transition systems"
  Shinji Watanabe, Masatoshi Imada
Oral Presentation in Physical Society Meeting (continued)

- 2004 March Physical Society of Japan, Area 8 (Kyusyu University)
  "Bandwidth- and Filling-Control Mott Transitions: Analysis by Grand-Canonical Path-Integral Renormalization Group and Thermodynamic Relations"
  Shinji Watanabe, Masatoshi Imada

- 2003 March Physical Society of Japan, Area 8 (Tohoku University)
  "Study of Metal-Insulator Transition by Grand-Canonical Path Integral Renormalization Group Method"
  Shinji Watanabe, Masatoshi Imada

- 2002 March Physical Society of Japan, Area 8 (Ritsumeikan University)
  "Ground-State Properties of Two-Dimensional Hubbard Model with Geometrically Frustrated Structure"
  Shinji Watanabe, Masatoshi Imada

- 2001 March Physical Society of Japan, Section of theory of magnetism (Kyoto University)
  "Anomalous $H_{c2}$ in ferromagnetic superconductor UGe$_2""
  Shinji Watanabe, Kazumasa Miyake

- 2000 September Physical Society of Japan, Section of theory of magnetism (Niigata University)
  "Ferromagnetism in a two-band model with a semimetallic band structure"
  Shinji Watanabe, Koichi Kusakabe, Yoshio Kuramoto

- 2000 March Physical Society of Japan, Section of theory of magnetism (Kansai University)
  "Mechanism of inter-orbital attractive force induced by coexistence of the crystalline-electric field with the Kondo effect"
  Shinji Watanabe, Yoshio Kuramoto

- 1999 September Physical Society of Japan, Section of theory of magnetism (Morioka University)
  "Magnetization curve in Kondo lattice"
  Shinji Watanabe

- 1999 March Physical Society of Japan, Section of theory of magnetism (Hiroshima University)
  "Incommensurate correlations in spin gap systems"
  Shinji Watanabe, Hisatoshi Yokoyama
Oral Presentation in Physical Society Meeting (continued)

- 1998 March  Physical Society of Japan, Section of theory of magnetism (Toho University)
  «Orbital degrees of freedom and Kondo effect in one-dimensional f$^2$ lattice systems»
  Shinji Watanabe, Yoshio Kuramoto

- 1998 September  Physical Society of Japan, Section of theory of magnetism (Ryukyu University)
  «Long-range correlations and impurity effects in spin gap systems»
  Shinji Watanabe, Hisatoshi Yokoyama

- 1997 March  Physical Society of Japan, Section of theory of magnetism (Meijo University)
  «Competition between CEF singlet and itinerant states in f-electron systems»
  Shinji Watanabe, Yoshio Kuramoto
Symposium Presentation in Physical Society Meeting

- 2000 September  Physical Society of Japan  Area 3 Symposium  (Niigata University)
  「Ferromagnetism in CeB$_6$ Systems -Current Status of Theory-」
  Yoshio Kuramoto, Shinji Watanabe, Koichi Kusakabe

Poster Presentation in Physical Society Meeting

- 1995 March  Physical Society of Japan, Section of statistical mechanics and fundamental condensed matter physics  (Kanagawa University)
  「A simple model for electronic states of Hemeproteins」
  Shinji Watanabe, Noboru Fukushima, Hiroshi Yoshida
Oral Presentation in Domestic Workshop/Meeting

- 2009 January  Scientific Research on Priority Area 「 Novel States of Matter Induced by Frustration 」 meeting  ( ISSP, University of Tokyo )
  「 The nature of quantum spin liquid and quantum fluid phase realized by hole doping on triangular lattices 」
  Shinji Watanabe

- 2008 December  Scientific Research on Priority Area 「 Novel States of Matter Induced by Frustration 」 The 3rd topical meeting 「 Frustration and Spin liquid 」 ( Kobe University )
  「 On the nature and origin of 2D quantum spin liquid -Comparison between electron and $^3$He systems- 」
  Shinji Watanabe

- 2008 December  Seminar in department of applied physics ( University of Tokyo ) 「 2D quantum spin liquid: Universal properties of $^3$He and electron systems 」
  Shinji Watanabe

- 2008 May  Scientific Research on Priority Area 「 Physics of New Quantum Phases in Superclean Materials 」 A01-A05 Group Workshop ( University of Tokyo ) 「 On the nature and origin of quantum spin liquid -2D $^3$He and electron systems- 」
  Shinji Watanabe

- 2007 December  Scientific Research on Priority Area 「 Invention of anomalous quantum materials -New physics through innovative materials- 」 Workshop for young scientists ( Atami Korakuen Hotel ) 「 Fluctuations and Superconductivity near Quantum Critical Points of Valence Transition 」
  Shinji Watanabe

- 2005 December  ISSP Theory group seminar ( ISSP, University of Tokyo ) 「 Electronic states near quantum critical point of valence transition 」
  Shinji Watanabe
Oral Presentation in Domestic Workshop/Meeting (continued)

- 2005 March  Kiken seminar  (Kiken, Kyoto University)
  「Algorithm of Path Integral Renormalization Group Method and its Application」
  Shinji Watanabe

- 2004 June  Riken Theory group seminar  (RIKEN)
  「Algorithm of Path Integral Renormalization Group Method and its Application」
  Shinji Watanabe

- 2003 December  Scientific Research on Priority Area  「New Quantum Phenomena in Skutterudite and Related Systems」 Theory group meeting  (Kansai seminar house)
  「Electronic states in f² lattice systems」
  Shinji Watanabe

- 2003 December  ISSP Theory group seminar  (ISSP, University of Tokyo)
  「Band width- and filling-control Mott transitions in quantum frustrated systems: Approach by grand-canonical path integral renormalization group method」
  Shinji Watanabe

- 2003 July  Workshop  「Computational Nano Material design · Development of quantum simulation method and its application」 (International Institute for Advanced Studies)
  「Algorism of Path Integral Renormalization Group Method and recent Developments」
  Shinji Watanabe

- 2003 March  Japan Society for the Promotion of Science  Research for the Future Program  「Computational Science」 The 6th open symposium  (Nagoya University)
  「Developments of Path Integral Renormalization Group Method」
  Shinji Watanabe，Masatoshi Imada

- 2002 June  ISSP Workshop  「Magnetism in frustrated systems and new matters」 (ISSP, University of Tokyo)
  「Metal-insulator transition and magnetic transition in quantum frustrated systems」
  Shinji Watanabe，Masatoshi Imada
Oral Presentation in Domestic Workshop/Meeting (continued)

- 2001 December  ISSP Workshop「Workshop on superconductivity in CeTIn$_5$ and UGe$_2$」(ISSP, University of Tokyo)
  「Coupled CDW and SDW Fluctuations as an Origin of Anomalous Properties of Ferromagnetic Superconductor UGe$_2$」
  Shinji Watanabe, Kazumasa Miyake

- 2001 January  Scientific Research on Priority Area「Orbital orderings and their fluctuations」Meeting (Tohoku University)
  「A proof of partially polarized ferromagnetic state in one-dimensional two-band model with strong correlation」
  Koichi Kusakabe, Shinji Watanabe, Yoshio Kuramoto

- 2000 December  ISSP Workshop「Computational physics in condensed matter physics -Developments by new ISSP supercomputer system-」(ISSP, University of Tokyo)
  「Partially polarized ferromagnetism in correlated-electron model with semimetallic band structure」
  Koichi Kusakabe, Shinji Watanabe, Yoshio Kuramoto

- 1999 November  ISSP Workshop「New quantum phenomena emerging in magnetization process in low-dimensional magnets」(ISSP, University of Tokyo)
  「Incommensurate correlations in spin gapped systems」
  Shinji Watanabe, Hisatoshi Yokoyama

- 1999 February  Computational physics by CP-PACS Workshop (Tsukuba University)
  「Incommensurate correlations and substitution effects in spin-gapped systems and high-Tc superconductors」
  Shinji Watanabe, Kenji Kobayashi, Hisatoshi Yokoyama
Oral Presentation in Domestic Workshop/Meeting (continued)

- 1998 November Scientific Research on Priority Area 「Anomalous metallic phases near Mott transitions」 Meeting (Kinenk, Tohoku University)
  「Ground states and elementary excitations in orbital- and spin-coexisting one-dimensional systems」
  Shinji Watanabe, Yoshio Kuramoto

- 1998 October Scientific Research on Priority Area 「Physics of strongly-correlated conducting systems」 Meeting (Tohoku University)
  「Orbital-degrees of freedom and Kondo effect in one-dimensional f^2 lattice systems」
  Shinji Watanabe, Yoshio Kuramoto
Poster Presentation in Domestic Workshop/Meeting

- 2009 January  Scientific Research on Priority Area 『 Invention of anomalous quantum materials -New physics through innovative materials- 』 meeting ( Institute of Industrial Science, University of Tokyo )
  "On Proximity of 4/7 Solid Phase of ³He Adsorbed on Graphite -Origin of Specific-Heat Anomalies in Hole-Doped Density-Ordered Solid-"
  Shinji Watanabe, Masatoshi Imada

- 2009 January  Scientific Research on Priority Area 『 Invention of anomalous quantum materials -New physics through innovative materials- 』 meeting ( Institute of Industrial Science, University of Tokyo )
  "Magnetic-Field Induced Quantum Critical Point of Isostructural First-Order Valence Transition"
  Shinji Watanabe, Atsushi Tsuruta, Kazumasa Miyake, Jacques Flouquet

  "The Nature of the 4/7 Solid and Fluid Phases of ³He Adsorbed on Graphite -Origin of Specific-Heat Anomalies by Hole Doping-"
  Shinji Watanabe, Masatoshi Imada

  "Electronic States near Quantum Critical Point of Valence Transition"
  Shinji Watanabe, Masatoshi Imada, Kazumasa Miyake

- 2006 January  Scientific Research on Priority Area 『 Invention of anomalous quantum materials -New physics through innovative materials- 』 meeting ( Kinken, Tohoku University )
  "Fluctuations and superconductivity near quantum critical point of valence transition"
  Shinji Watanabe, Masatoshi Imada, Kazumasa Miyake
Poster Presentation in Domestic Workshop/Meeting (continued)

- 2005 December  Scientific Research on Priority Area 「Physics of New Quantum Phases in Superclean Materials」 meeting (University of Tokyo)
  「Electronic States near Quantum Critical Point of Valence Transition」
  Shinji Watanabe, Masatoshi Imada, Kazumasa Miyake

- 2004 January  Scientific Research on Priority Area 「Novel Quantum Phenomena in Transition Metal Oxides」 meeting (University of Tokyo)
  「Bandwidth- and Filling-Control Mott Transitions: Analysis by Grand-Canonical Path-Integral Renormalization Group and Thermodynamic Relations」
  Shinji Watanabe, Masatoshi Imada

- 2003 January  Scientific Research on Priority Area 「Novel Quantum Phenomena in Transition Metal Oxides」 meeting (ISSP, University of Tokyo)
  「Grand-Canonical Path Integral Renormalization Group Method」
  Shinji Watanabe, Masatoshi Imada

- 2002 January  Scientific Research on Priority Area 「Novel Quantum Phenomena in Transition Metal Oxides」 meeting (University of Tokyo)
  「Ground-State Properties of Two-Dimensional Hubbard Models with Geometrically Frustrated Structure」
  Shinji Watanabe, Masatoshi Imada

- 2001 January  Scientific Research on Priority Area 「Novel Quantum Phenomena in Transition Metal Oxides」 meeting (Kinken, Tohoku University)
  「Partial Ferromagnetism in Semimetallic Two-Band Models」
  Shinji Watanabe, Koichi Kusakabe, Yoshio Kuramoto

- 2000 May  IIAS-JRCAT Workshop on Phase Control of Correlated Electron Systems (International Institute for Advanced Studies)
  「Ferromagnetism in a Semimetallic Two-Band Model」
  Shinji Watanabe, Koichi Kusakabe, Yoshio Kuramoto

- 2000 January  Scientific Research on Priority Area 「Orbital orderings and their fluctuations」 meeting (Tohoku University)
  「Magnetization process in electron systems with orbital- and spin-degrees of freedom」
  Shinji Watanabe
Poster Presentation in Domestic Workshop/Meeting (continued)

- 1999 November Scientific Research on Priority Area 「Invention of anomalous quantum materials -New physics through innovative materials-」 meeting (Kinken, Tohoku University)
  「Magnetization Process in Electron Systems with Orbital and Spin Degrees of Freedom」
  Shinji Watanabe

- 1998 November Scientific Research on Priority Area 「Anomalous metallic phases near Mott transitions」 meeting (Kinken, Tohoku University)
  「Single crystal CuNb$_2$O$_6$ and bond-alternating spin model」
  Hisatoshi Yokoyama, Shinji Watanabe
Doctor thesis (supervisor: Prof. Yoshio Kuramoto)

Effects of $f^2$ Configuration and Magnetization Process in the One-Dimensional Kondo Lattice Model