TO: Executive Secretaries of the US-Japan Fusion Research Collaboration

FROM: Steering Committee, US-Japan Joint Institute for Fusion Theory (JIFT)

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SUBJECT: JIFT Annual Report of Activities for 2017-2018

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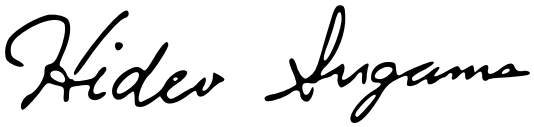

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Annual Report of Activities

US-Japan Joint Institute for Fusion Theory

April 1, 2017–March 31, 2018

JIFT Steering Committee

Co-Chairmen: H. Sugama and F. L. Waelbroeck

Co-Executive Secretaries: S. Ishiguro and A. Arefiev

January 31, 2018

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1. *INTRODUCTION*

The Joint Institute for Fusion Theory (JIFT) is one of the three programs through which the US-Japan Fusion Research Collaboration is organized. The other two programs are the Fusion Physics Planning Committee (FPPC) and the Fusion Technology Planning Committee (FTPC).

The distinctive objectives of the JIFT program are (1) to advance the theoretical understanding of plasmas, with special emphasis on stability, equilibrium, heating, and transport in magnetic fusion systems; and (2) to develop fundamental theoretical and computational tools and concepts for understanding nonlinear plasma phenomena. Both objectives are pursued through collaborations between U.S. and Japanese scientists by means of two types of exchange program activities—namely, workshops and exchange visitors.

Each year the JIFT program usually consists of four topical workshops (two in each country), six exchange scientists (three from each country). So far, during its 37 years of successful operation, JIFT has sponsored 235 long-term visits by exchange scientists and 135 topical workshops.

- The *workshops* typically have an attendance of 15–30 participants, of whom usually three to seven scientists (depending on the particular workshop) travel to the workshop from the non-host country. Scientists from countries other than the U.S. and Japan are also often invited to participate in JIFT workshops, either as observers or multi-laterals.
- Of the approximately three *exchange visitors* in each direction every year, one (called the "JIFT Visiting Professor") is supported by the host country, while the others (called "Exchange Scientists") are supported by the sending country. The visits of the Exchange Scientists usually last from one to several weeks in duration, whereas the Visiting Professors normally stay for one month.

The topics and also the participating scientists for the JIFT exchange visits, and workshops are selected so as to have a balanced representation of critical issues in magnetic fusion research, including both fundamental problems as well as questions of near-term significance, and also to take into account the specific capabilities and interests of both countries. The Japanese and US members of the JIFT Steering Committee agree together on the appropriateness of proposed topics before recommending them.

2. *SUMMARY OF COMPLETED ACTIVITIES (2017-2018 PROGRAM)*

Most of the activities in the two categories—workshops and personal exchanges—that had been scheduled for the 2017-2018 JIFT program were carried out during the past year. Four workshops were successfully held, in addition to the JIFT Steering Committee meeting. In the category of personal exchanges, two Visiting Professor and seven Visiting Scientists made exchange visits.

Summary reports about JIFT activities for 2017-2018 are given below.

A 2017-2018 Workshops

Japan to US:

JF-1 Multiscale methods in plasma physics
Organizers: S.ISHIGURO (NIFS) & Scott Parker (Colorado)
Location: Boulder
Dates: August 21-26, 2017
Summary:

The US–Japan Joint Institute of Fusion Theory Workshop on "Multiscale Methods in Plasma Physics" was held August 22–24, 2017 at the University of Colorado, Boulder, USA. This workshop focused on implicit methods combined with multiscale techniques for bridging fine and coarse scales in plasma physics. Topics included coupling the microturbulence scale with the transport scale in fusion plasmas, orbit-averaging, subcycling, and multiple time step techniques in particle-in-cell models and equation-free methods. International experts in this emerging field came

together for a small discussion-oriented workshop. Select papers from work reported at this workshop are highlighted in a Special Issue of *Plasma*, an international, open access, peer reviewed journal covering all aspects of plasma science and published quarterly online by MDPI.
http://www.mdpi.com/journal/plasma/special_issues/multiscale_method

US to Japan:

JF-6 US-Japan collaborations on co-designs of fusion simulations for extreme scale computing
Organizers: T.-H. WATANABE (Nagoya) & C. S. Chang (PPPL)
Location: Center for Computational Science and e-Systems, Japan Atomic Energy Agency, Kashiwa, Japan
Dates: AUG.7-9, 2017
Summary:

The third US-Japan Joint Institute for Fusion Theory (JIFT) Workshop was held at Future Center Initiative of University of Tokyo at Kashiwa, on 7-8 of August. The purpose of the workshop was to promote US-Japan collaborations on co-design of fusion applications toward extreme scale computing, and on high performance computing in fusion simulations of core and edge plasma-material interactions. Fourteen researchers from Japan and twelve US researchers from a variety of research fields, such as computer science, fusion plasma theory, and the material science were invited to the workshop. Major topics presented at the workshop include prospects of high performance computing on the extreme-scale supercomputers, and recent progresses in fusion plasma simulations and material simulations.
The organizers also agreed to have the next workshop in Princeton, US.
https://www.iacs.stonybrook.edu/news/news-articles/us-japan-collabration-on-exascale-computing

JF-7 Progress on advanced optimization concept and modeling in stellarator-heliotrons
Organizers: Sadayoshi Murakami (Kyoto Unkiv.) and David Anderson (Wisconsin Univ.)
Location: Kyoto University, Uji Campus, Uji
Dates: March 23-24, 2018
Summary:

US and Japan are starting to consider about advanced configuration optimizations and new devices. The purpose of this workshop was to promote the activities on the configuration optimization and modeling in stellarator and heliotrons. This workshop was the first JIFT workshop on optimization concept and modeling in stellarator-heliotrons and will continue to support the activities of the related community in the US and Japan. 24 participants attended this workshop, and there were 13 oral presentations (4 from the US, 9 from Japan). The presentations covered a wide range of subjects related to configuration optimizations and modeling in stellarator-heliotrons, such as recent experiment results (ITB formation and isotope effects), next-step program, optimization of plasma edge, turbulent transport optimization, and energetic particle confinement optimization.

JF-8 Theory and Simulations of High-Field and High Energy Density Physics
Organizers: Yasuhiko Sentoku (ILE, Osaka), Alex Arefiev (UCSD, USA), Tomoyuki Johzaki (Hiroshima)
Location: Hiroshima, Japan
Dates: March 27 - 28, 2018
Summary:

The purpose of this workshop was to discuss the theory and simulations of high field and high energy density physics and the potential applications. The workshop had been held at Hiroshima city in March 27 - 28 with 32 participants. Six of them were from US. We have 25 oral talks, 6 of which are from US. We had discussed the theory and the numerical modeling for laser acceleration,

relativistic laser plasma interaction (LPI), ionization dynamics in LPI, kinetic equilibrium in LPI, spatiotemporal controlled new laser light, and fast ignition. Some experimentalists also attended and provided the latest experimental results to the theorists. The workshop went successfully. We could stimulate each other and warm our friendship up among US and Japan scientists and students. The agenda and photographs can be obtained from the workshop web site http://cer.ucsd.edu/_news-events-articles/2018/US-Japan-workshop-2018.html

B. 2017-2018 Exchange Visits

Japan to US:

JF-2 Numerical analysis of edge harmonic oscillation dynamics in DIII-D QH-mode plasmas
Visiting scientist: Nobuyuki Aiba (QST)
Location: General Atomics, San Diego, CA
Dates: November 5-19, 2017 (15 days); paid by QST (Japan)
Summary:

Dr. Aiba has been studying the linear stability of edge localized modes (ELMs) in tokamak plasmas, and has collaborated with Dr. P. B. Snyder at General Atomics for understanding their physics. The main objective of this program is to analyze the stability in quiescent H-mode (QH-mode) plasmas by using a Japanese numerical code MINERVA-DI. This is because Dr. Aiba recently updated the numerical code by developing a physics model which realizes to take into account rotation and the ion diamagnetic drift effects on the stability, the effects which are important to obtain edge harmonics oscillations (EHOs) observed in quiescent H-mode (QH-mode) in DIII-D tokamak. In fact, the EHOs have been observed experimentally when the plasma current density and rotation shear are very large near plasma surface, hence, they are regarded as "peeling" modes driven by plasma current and rotation shear. During the stay, we started to do benchmarking test between MINERVA-DI and ELITE which has been used for the ELM and QH-mode analyses in General Atomics. In parallel, Dr. Aiba started to collaborate with some experimental researchers, Dr. K. H. Burrell, Dr. X. Chen, and. Dr. T. H. Osborne. They are choosing some discharges suitable for analyzing numerically the stability from the viewpoint of measurement data quality, and will provide data required for the stability analysis. After receiving them, Dr. Aiba will analyze the stability of them, and investigate quantitatively the impact of rotation and the ion diamagnetic drift effects on the stability of the peeling mode in QH-mode plasmas in DIII-D.

JF-3 Optimization of stellarator and Heliotron using simple coil geometry
Visiting scientist: Y. SUZUKI (NIFS)
Location: PPPL, Princeton, NJ
Dates: September 3-10, 2017 (8 days); paid by Japan
Summary:

The purpose of this activity is the development of a new coil optimization code, FOCUS (Flexible Optimized Coils Using Space-curves). S. Hudson (PPPL) and C. Zhu (USTC), who is a Ph.D students of China-US joint Ph.D program, are developing the new coil optimization code, FOCUS. Y. Suzuki (NIFS) applied that code to design an optimized heliotron configuration. In our activity, a new preconditioning based on the physcis property is implemented to FOCUS. Using FOCUS code, we could successfully design the coild system of an optimized heliotron reducing the neoclassical transport.

JF-4 Numerical Analysis of Energetic Particle Phase Space Structure in Toroidal Plasmas
Visiting scientist: Yasushi Todo (NIFS)
Location: IFS, University of Texas at Austin, Austin, Texas
Dates: March 13-31, 2018 (19 days); paid by US
Summary:

Dr. Todo has been collaborating over a period of many years with Dr. H. L. Berk and Dr. B. N. Breizman at IFS on the nonlinear evolution of Alfvén eigenmodes (AEs) destabilized by energetic particles. During Dr. Todo's visit in 2018, the fast ion distribution function in a hybrid simulation presented in Fig. 7 in [Todo et al., Nuclear Fusion 54 (2014) 104012] was discussed. The fast ion distribution is formed with the neutral beam injection, the collisions with the bulk plasma, and the interaction with the multiple AEs. What attracted their attention is the distribution function for low energy, which is comparable to the classical distribution without the interaction with AEs, while it is significantly reduced for high energy. They concluded that the low-energy fast ions should obtain energy from AEs, which leads to the deceleration of the slowing-down process. Dr. Todo, Dr. Berk, and Dr. Breizman agreed on a new collaboration to study the nonlinear evolution of the continuum damping of AEs. Dr. Todo gave a seminar on "Recent progress of kinetic-MHD hybrid simulation of energetic particle driven instabilities" on March 15.

JF-5 Extension of gyro-kinetic simulation to the helical edge plasmas
Visiting Scientist: Toseo Moritaka (NIFS)
Location: PPPL, Princeton, New Jersey and IFS, University of Texas at Austin, Austin, Texas
Dates: February 19 - March 23, 2018 (33 days); paid by Japan
Summary:

This exchange activity was carried out during February 19 - March 23, 2018 as a US-Japan fusion program. Dr. Moritaka has been collaborating with the X-point Gyrokinetic Code (XGC) Team (PI : prof. C-S. Chang) in PPPL to develop the Helical / Stellarator version of XGC. XGC was developed for whole-device modeling of magnetic fusion device but limited in axisymmetric Tokamak geometries. During the present visit, a mesh generation tool was prepared for general non-axisymmetric geometries including Large Helical Device (LHD) and Wendelstein 7-X. Resulting unstructured mesh follows the field lines of equilibrium magnetic field and the vacuum vessel boundary. Core plasma dynamics such as geodesic acoustic mode and zonal flow damping in a magnetic equilibrium of LHD have been demonstrated consistently with the previous simulation studies by Fortec-3d and GT5D. Using the simulation results, particle trajectories from the core region to the vacuum vessel are evaluated to investigate the effects of the ambipolar electric field in high energy particle confinement. The current status of the code development was presented in IFS and discuss about the simulation results on high energy particle confinement in LHD with profs. Berk and Briezman (IFS) and prof. Todo who was visiting from NIFS. These results have been submitted to IAEA-FEC 2018.

US to Japan:

JF-9 Numerical analysis of Alfvén eigenmodes in LHD
Visiting Scientist: J. Varela (ORNL)
Location: NIFS
Dates: APR.4-13, 2017
Summary:

In collaboration with Prof. Todo, Dr. Varela extended the studies performed in ORNL about AE stability in different LHD configurations, including new experimental data. In addition, he participated in bench marking studies between FAR3D and MEGA codes with the aim to analyze Alfven Eigenmode (AE) stability in low density / low field Large Helical Device (LHD) operations. FAR3D and MEGA showed similar results for the case of a Maxwellian energetic particles distribution, also obtaining similar conclusions in the study of the effect of the neutral beam injector (NBI) energy on AEs growth rate and frequency, identifying the optimal NBI operation regime required to improve the device performance versus the AE activity. This collaboration continues and it will be extended to other LHD discharges, providing useful information of the AE stability in nuclear fusion devices.

JF-10 Gyrokinetic turbulent transport simulation study in magnetized plasmas
Visiting Scientist: David Hatch (IFS)
Location: NIFS
Dates: AUG.28-SEP.8, 2017
Summary:

Dr. Hatch visited NIFS from March 5-14 hosted by Dr. Masanori Nunami. He discussed stellarator turbulence with Drs. Nunami and Nakata and proposed a prospective collaboration to analyze stellarator turbulence data using proper orthogonal decomposition (POD) in collaboration with Dr. MJ Pueschel and Prof. Ishizawa. On March 8, he gave a talk to the NIFS theory group on pedestal turbulent transport. He visited Nagoya University on March 9, gave a seminar, and had extensive discussions with Profs. Watanabe and Maeyama, and students. On March 12 he visited Kyoto University, gave a seminar and had physics discussions with Profs. Ishizawa and Kishimoto.

JF-11 Fast ion acceleration by intense short laser pulse under mega-gauss magnetic fields
Visiting Scientist: Alexey Arefiev (UCSD)
Location: OSAKA U.
Dates: Mar.25-26, 2018
Summary:

Prof. Arefiev (UCSD) visited Institute for Laser Engineering at Osaka University on 03/25/2018 - 03/26/2018. The purpose of the visit was to discuss new scientific results in the area of high energy density science and to coordinate future US-Japan collaborations organized by JIFT. Prof. Arefiev met with Prof. Sentoku and members of his group working on laser-plasma interactions. After his previous visit to Japan, Prof. Arefiev submitted a proposal requesting beam time at the LFEX laser facility to validate his theoretical predictions about the positive impact an external kT-level magnetic field can have on laser-driven ions. During this visit to ILE, Prof. Arefiev further discussed this project with Prof. Sentoku and his group in order to identify the regimes of operation that are the most suitable for observing the effect of interest at LFEX.

JF-12 Polarization corrections to ray equations and their effects on the propagation of radiofrequency waves in magnetized plasmas
*Visiting Scientis*t: Ilya Dodin (PPPL)
Location: NIFS
Dates: Nov.30- Dec.11, 2015
Summary:

Dr. Ilya Dodin visited NIFS from June 13 to July 12, 2017 under the NIFS visiting professor program. During this period, Dr. Dodin participated in several group meetings: (1) On June 27, 2017, he gave a seminar on the topic “Extended geometrical optics and corrections to ray equations” for the Numerical Simulation Reactor Research Project. (2) On June 21, 2017, Dr. Dodin participated in a discussion with Profs. Shin Kubo, Hiroaki Nakamura, Shunsuke Usami, and Mr.

Yanagihara regarding the problems of wave modeling for LHD and their possible solutions by extending Dr. Dodin's earlier theories. (3) On June 29, 2017, Dr. Dodin participated in another group meeting with the same members of NIFS. This meeting was devoted to discussing the potential solution that Dr. Dodin proposed for improving the ray tracing code GAUSS that was previously developed for LHD by Prof. Kubo. The improvement involves accounting both for diffraction and polarization effects, which are captured by Dr. Dodin's theory simultaneously. As a result of Dr. Dodin's visit, Prof. Kubo's team started developing a new code for more accurate numerical simulations of plasma waves in LHD using Dr. Dodin's theory. This numerical work is currently in progress, and its preliminary results were presented at the 59th Annual Meeting of the APS Division of Plasma Physics (Milwaukee, WI, Oct 23-27, 2017). In addition, as a follow-up to Dr. Dodin's visit to NIFS, an analytical theory of mode conversion in cold low-density edge plasma with a sheared magnetic field was formulated and published in [I. Y. Dodin, D. E. Ruiz, and S. Kubo, Phys. Plasmas 24, 122116 (2017)]. Notably, this paper was selected as Physics of Plasmas Editor's Pick.

JF-13 Three-Dimensional MHD simulation of helical axis core
*Visiting Scientis*t: Karsten McCollam (U. WISCONSIN)
Location: NIFS
Dates: SEP.3-OCT.14, 2017
Summary:

Dr. McCollam and his NIFS host, Prof. Yasuhiro SUZUKI, began a collaboration to study the 3D MHD simulation of toroidal fusion plasmas. The initial laboratory context for our nominal topic of the helical axis is the reversed-field pinch (RFP), where single-helicity (SH) states are of interest for their self-organization physics and confinement properties, but there may also be connections to the core of stellarator plasmas. Our initial work will also form the basis for us to direct our MHD exploration toward other contexts of interest, such as ELM activity in tokamak pedestals. Our chief operational activity during this visit was to install the MHD code NIMROD on the Plasma Simulator (PS), a powerful supercomputer at NIFS. In order to do so, Prof. Suzuki became a NIMROD team member and user, as is Dr. McCollam. The NIMROD team is an active, diverse, collaborative group of researchers based in the USA. The FORTRAN compiler on PS is proprietary, and installing NIMROD properly with its attendant libraries was a challenge. We did have the serial version of NIMROD compiled and working on PS by the close of Dr. McCollam's visit, and soon afterward, Prof. Suzuki was able to compile the parallel version. The serial version is appropriate for high-resolution linear stability calculations in extended MHD, for instance for ELM-relevant modes, and the parallel version will enable large nonlinear simulations, for instance RFP plasmas at high plasma current, which is oberved in lab experiments to favor the spontaneous formation of SH states. Drs. Suzuki and McCollam plan to continue this collaboration, which also includes other researchers from the University of Wisconsin and the Kyoto Institute of Technology RFP groups. A key theme of ongoing work will be MHD simulations in mutual support of laboratory experiments.

3. *PROGRAM ADMINISTRATION*

JIFT has a Steering Committee consisting of eight members, four from each country. Two of these members are the Japanese and US co-chairmen. Two other members of the Steering Committee, the US and Japanese co-executive secretaries, are responsible for the ongoing daily oversight of the progress of JIFT activities. The co-chairman and co-executive secretary on the US side are, respectively, the director and a research scientist at the Institute for Fusion Studies (IFS) of The University of Texas at Austin. The Japanese co-chairman is the Leader of the Numerical Simulation Reactor Research Project at the National Institute for Fusion Science, and the Japanese co-executive secretary is the director of the Fundamental Physics Simulation Research Division in the Department of Helical Plasma Research at the National Institute for Fusion Science. Furthermore, on the

Japanese side there is an Advisory Committee comprised of five members representing a spectrum of Japanese universities and the National Institutes for Quantum and Radiological Science and Technology; and on the US side there is an Advisory Committee comprised of five members representing a spectrum of US universities and national laboratories. The names of the persons on the Steering Committee and the names of the Advisors are listed below.

JIFT Steering Committee

US Members	*Japanese Members*
F. Waelbroeck (IFS)—Co-Chairman	H. Sugama (NIFS)—Co-Chairman
A. Arefiev (UCSD)—Co-Exec. Secretary	S. Ishiguro —Co-Exec. Secretary
D. Spong (ORNL)	S. Murakami (Kyoto)
J. Mandrekas (DOE)	H. Nagatomo (Osaka)

JIFT Advisors

Japanese Advisory Committee: Y. Todo (NIFS), Y. Kishimoto (Kyoto), Z. Yoshida (Tokyo), T.-H. Watanabe (Nagoya), M. Yagi (QST)

*US Advisory Committee***:** P. Bonoli (MIT), A. Friedman (LLNL), W. Horton (IFS), W. Tang (PPPL), and P. Terry (UWM)

The JIFT Steering Committee attempts to schedule workshops in such a way as to dovetail with other meetings. It also encourages participation at workshops by interested experimentalists and invites relevant available scientists from other countries to attend workshops.

As the principal program for fundamental theoretical exchanges in the US-Japan Fusion Research Collaboration, JIFT operates alongside the Fusion Physics Planning Committee (FPPC) and the Fusion Technology Planning Committee (FTPC). In particular, the JIFT activities are coordinated with the four FPPC areas of activity, viz., core plasma phenomena, edge behavior and control, heating and current drive, and new approaches and diagnostics.

4. *PLANS FOR FUTURE ACTIVITIES (PROPOSED 2018-2019 PROGRAM)*

The topics and themes of the exchange activities that have been proposed for the next year (April 1, 2018–March 31, 2019) are consistent with the traditional emphasis of JIFT on fundamental theoretical plasma physics issues. At the same time the proposed activities have direct relevance to the fusion science programmatic interests of both countries. The schedule of proposed activities for the coming year (2018-2019) is listed below.

A. 2018-2019 Proposed Workshops

Japan to US:

JF-1 US-Japan collaborations on co-designs of fusion simulations for extreme scale computing
Organizers: T.WATANABE (Nagoya) & C. S. Chang (PPPL)
Proposed Place/Time: PPPL, Princeton (USA) Jul.31- Aug. 5, 2018

JF-2 Theory and simulation on the high field and high energy density physics
Organizers: Y. SENTOKU (Osaka) & Alexey Arefiev (UCSD)
Proposed Place/Time: Portland, O (USA) Nov. 9-10, 2018

JF-3 Progress on advanced optimization concept and modeling in stellarator-heliotrons
Organizers: S. MURAKAMI (Kyoto) & D. Anderson (Wisconsin Univ.)
Proposed Place/Time: Auburn (USA) Feb. 17-22, 2019

US to Japan:

JF-11 Multiscale simulation in plasma physics
Organizers: S. ISHIGURO (NIFS) & Scott Parker (Colorado Univ.)
Proposed Place/Time: INUYAMA (AICHI) Aug. 22-24, 2018

B. 2018-2019 Proposed Exchange Visits

Japan to US:

JF-4 Control of ignition and burn dynamics in fast ignition laser fusion by externally applied ultra-intense magnetic fields
Visiting Scientist: T. JOHZAKI (HIROSHIMA U.)
Location: U. Purdue
Dates: Aug.25-Sep.8, 2018

JF-5 Neutron Generation by Asymmetric Implosion of Solid Targets
Visiting Scientist: H. SAKAGAMI (NIFS)
Location: U. NEVADA
Dates: Nov.18 - Dec.1, 2018

JF-6 Interactions between electron and ion scale turbulence
Visiting Scientist: S. MAEYAMA (NAGOYA U.)
Location: Massachusetts Institute of Technology
Dates: July.21- Aug.19, 2018

JF-7 Simulation Study of Magnetized Fast Ignition Fusion
Visiting Scientist: T. TAGUCHI (SETSUNAN U.)
Location: IREAP
Dates: Aug.12- Sep.9, 2018

JF-8: Investigation of the effects of the helium bubble formation on plasma-material interaction
Visiting Scientist: S. SAITO (National Institute of Technology, KUSHIRO)

Location: U. CALIFORNIA
Dates: DEC, Dec.1, 2018 - Jan.14, 2019

JF-9 Three-dimensional MHD equilibrium calculation by simulated annealing
Visiting Scientist: M. FURUKAWA (TOTTORI U.)
Location: IFS, Texas U
Dates: Sep.27-Mar.31, 2019

JF-10 Nonlinear extended MHD simulations of ballooning-type instability
Visiting Scientist: H. MIURA (NIFS)
Location: IFS, Texas U
Dates: March. 3-24, 2019

US to Japan:

JF-12 Application of gyrokinetic models to energetic particle driven instabilities observed in LHD
Visiting Scientist: Donald A. Spong (ORNL)
Location: NIFS
Dates: Apr.1-10, 2018

JF-14 Extending the XGC code for stellarator/heliotron geometry
Visiting Scientist: Michael Cole (PPPL)
Location: NIFS
Dates: Jun.3-17, 2018

JF-15 Electromagnetic turbulence in fusion plasmas
Visiting Scientist: M.J. Pueschel (U.TEXAS)
Location: U.KYOTO
Dates: July.16-20, 2018

JF-16 3D MHD simulation of helical axis core
Visiting Scientist: Karsten McCollam (U. WISCONSIN)
Location: NIFS
Dates: Nov.4-11, 2018

JF-17 Transport on Stochastic Magnetic Field
Visiting Scientist: Aaron Bader (U. WISCONSIN)
Location: NIFS

Dates: Jan.20-27, 2019

JF-18 Simulation study on global kinetic transport process in torus plasmas
Visiting Scientist: Weixing Wang (PPPL)
Location: NIFS
Dates: Aug.1-Sep28, 2018