# 22nd International Conference on Atomic Processes in Plasmas
# 1st NIFS Conference on Atomic and Molecular Processes in Plasmas
# PROGRAM

## July 21 (Mon)

16:00   Registration and Reception (ends at 18:00)
(International Center, Tokyo Metropolitan University)

18:00   End

## July 22 (Tue)

08:30   Registration

09:30   Opening

09:50   Motoshi Goto (NIFS)
(invited) Spectroscopic studies in LHD focusing on atomic processes

10:20   Andreas Langenberg (IPP)
(invited) Tungsten Spectroscopy at W7-X: Diagnostics, Models, and Applications

10:50   coffee

11:10   Martin O'Mullane (U. Strathclyde)
(memorial) Approaching complexity for atomic data and models

11:40   Tomoko Kawate (QST)
(invited) Electron collision processes for BH and $BH^+$ molecules

12:10   Ritu Dey (IITT)
Simulating the Low Charge State Emissions from Tungsten for Fusion Applications

12:30   Ibtissem Hannachi (U. Batna 1)
Hydrogen Stark broadening revisited for magnetic fusion plasma diagnostics

12:50   lunch

14:10   Conor Perks (MIT)
(invited) High-resolution laboratory measurements of tungsten M-shell x-ray spectra for burning plasma diagnostics in SPARC and ITER

14:40   Masahiro Kobayashi (NIFS)
(invited) Thermal Instability in Magnetically Confined Toroidal Plasmas Induced by Radiative Emission of Highly Charged Ions

15:10   Yuki Hayashi (NIFS)
Dynamic response of atomic processes in recombining helium plasmas to high-density pulse in Magnum-PSI

15:30   coffee

15:50    Ulises Losada (Auburn U.)
(invited) Advances in Tungsten Ultraviolet Spectroscopy via Improved Atomic Physics Calculations for Erosion Diagnostics in Fusion Plasmas

16:20    Tsunehiro Morita (Kyoto U.)
A numerical study on the feasibility of the recombination front measurements by analyzing the Zeeman effect on the chord integrated deuterium Paschen α line spectrum in JT-60SA

16:40    Keisuke Fujii (ORNL)
Analytic Scaling of Neutral Transport in High-Temperature Plasma Edges through Repetitive Charge Exchange Collisions

17:00    Poster Session A

19:00    End


## July 23 (Wed)

09:30    Yuri Ralchenko (NIST)
(invited) Till 120! Triumph and Twilight of Atomic Spectroscopy at NIST

10:00    Jianmin Yuan (Jilin U.)
Influences on the continuum atomic processes in hot and dense plasmas due to IPD and changes of continuum electron wavefunctions

10:20    Shivam Gupta (NCKU)
Theoretical Investigation of Electron Impact Excitation and Radiative Processes in Highly Charged Tin Ions Using a Collisional-Radiative Model

10:40    coffee

11:10    John Sheil (ARCNL)
(memorial) Howard Scott: The scientist, the colleague, the mentor

11:40    Shinsuke Fujioka (ILE)
(invited) X-ray Spectroscopy of High Energy Density Plasma for Inertial Fusion Energy Development

12:10    Patrick Renaudin (CEA/DAM)
Cooling and recombination dynamics of an Al plasma in AlTi or AlAu mixtures heated by an ultraintense laser pulse

12:30    Xing Wang (Xi'an Jiaotong U.)
Enhanced x-ray absorption and heating in medium-Z-doped CHO foams under laser-driven hohlraum radiation

12:50    Lunch

14:10    Evgeny Stambulchik (WIS)
(invited) Fast evaluation of complex line shapes in plasma

14:40    Marc-Andre Schaeuble (SNL)
(invited) Using deep learning to develop a fast, versatile NLTE spectral model for application to HED systems

15:10    Hai P Le (LLNL)
         Impact of super-Gaussian electron distributions on plasma K-shell emission

15:30    coffee

16:00    Bob Nagler (SLAC)
         (invited) Direct measurement of ion temperature and electron-ion equilibration in warm dense matter

16:30    Oliver Humphries (EuXFEL)
         (invited) Ionization dynamics and electronic structure of x-ray heated plasmas

17:00    Moto Togawa (EuXFEL)
         Nonlinear response of highly charged ions to ultraintense XFEL radiation

17:20    Hae Ja Lee (SLAC)
         Understanding of hot dense plasmas isochorically heated by XFEL using X-ray emission spectroscopy

17:40    End


## July 24 (Thu)

09:30    Thomas Gawne (CASUS)
         (invited) M-shell Rebinding in Hot, Solid-density Mg and Al

10:00    Pedro Velarde (IFN, UPM)
         Probing dense plasmas with high harmonics

10:20    Lucas Ansia Fernadez (GoLP, IST)
         Shake-off in XFEL Heated Solid-Density Plasma

10:40    coffee

11:10    Maria Teresa Belmonte Sainz-Ezquerra (U. Valladolid)
         (invited) Experimental Plasma Spectroscopy: meeting data needs for astrophysics

11:40    Hiroya Yamaguchi (ISAS/JAXA)
         (invited) High-Resolution X-Ray Spectroscopy of Astrophysical Plasmas with XRISM

12:10    Yuki Amano (ISAS/JAXA)
         A Laboratory plasma experiment for X-ray astronomy using a compact electron beam ion trap (EBIT)

12:30    Masahiro Tsujimoto (ISAS/JAXA)
         X-ray Microcalorimeter Spectroscopy and Radiative Transfer Modeling of Astrophysical Plasmas around Neutron Stars and Black Holes

12:50    lunch

14:10    Ryoko Ishikawa (NAOJ)
         (invited) Exploring the Sun with Ultraviolet SpectroPolarimetry: The CLASP Sounding Rocket Series

14:40   Roi Avraham Rahin (NASA)
        The structure of the AGN narrow-line region as probed by emission line ratios

15:00   Poster Session B

17:00   End


18:30   Banquet (Royal Garden Palace Hachioji Nihonkaku)


## July 25 (Fri)

09:30   Patricial Cho (LLNL)
        (invited) Testing High Density XSTAR Models with Fe Photoionized Plasma Experiments on
        the Z Machine

10:00   Jerome Deprince (U. Mons)
        (invited) Large scale computation of atomic data in heavy elements for kilonova modeling

10:30   Chunyu Zhang (U. Strathclyde )
        Dielectronic Recombination of Fe $3d^k$ Ions

10:50   Hiroaki Nakamura (NIFS)
        Molecular Dynamics Study of Amino Acid Precursor Formation under Space-like Conditions

11:10   coffee

11:40   Kirsten Dowd (UCD)
        Visible-Near Infrared Photo-absorption in Zirconium Plasmas for Kilonova Studies

12:00   Mourad Telmini (UTM)
        Mapping Rydberg states of $H_2$ with the Halfium R-matrix method

12:20   Ayushi Agrawal (IIT Roorkee)
        Detailed Collisional-Radiative Analysis of Iodine Plasma for Plasma Diagnostics

12:40   lunch

14:00   Canelia Miron (Nagoya U.)
        (invited) Cold atmospheric pressure plasma-treated liquids and formulations for cancer
        treatment

14:30   Marc Sackers (FZ Jülich)
        (invited) On the line shape of sputtered atoms in low-temperature magnetized plasmas

15:00   Mi-Yong Song (KIFE)
        Development of Ar and N2 Plasma Spectroscopy Reference Data for Plasma Characterization
        using Collision-Radiation Models and Machine Learning

15:20   Closing

15:40   End