

Program

Max Planck Princeton Center – Workshop

Hosted by the Max Planck Institute for Solar System Research

20 - 23 January 2020

Monday, 20 January 2020

09:00	Good Morning Coffee		Foyer
Chair	Per Helander		
09:30		Welcome	Auditorium
10:00	Michael Barnes	Turbulence in stellarators	Auditorium
10:30	Michael Cole	XGC-S: a full-f stellarator code	Auditorium
11:00	Coffee Break		Foyer
Chair	Hantao Ji		
11:30	Andrew Giuliani	Stellarator optimization with derivatives	Auditorium
12:00	Erika Strumberger	Sawtooth crashes in stellarators	Auditorium
12:30	Samuel Totorica	Roles of nonlinear kinetic ballooning instabilities and reconnection in the explosive onset of substorms	Auditorium
13:00	Young Researchers' Lunch		Science Gallery
	Lunch		Canteen
14:00	Breakout Session	Turbulence	
14:00	Breakout Session	Reconnection	
15:30	Coffee Break		Foyer
16:00	Breakout Session	Astro	
16:00	Breakout Session	Stellarator	
17:30	Guided Tour through the Institute		Foyer
18:30	Reception		Foyer

Tuesday, 21 January 2020

09:00	Good Morning Coffee		Foyer
Chair	Stuart Hudson		
09:30	Shoichi Okamura	Chinese first quasi-axisymmetric stellarator (CFQS)	Auditorium
10:00	Elizabeth Paul	Adjoint methods in stellarator optimization	Auditorium
10:30	Qingquan Yu	Nonlinear simulation results for understanding electron temperature crashes in W7-X ECCD experiments	Auditorium
11:00	Coffee Break		Foyer
Chair	Valentin Igochine		
11:30	Jongsoo Yoo	Plasma waves in the reconnecting current sheet from MMS and MRX	Auditorium
12:00	Masahiko Sato	Kinetic-MHD hybrid simulations of MHD instabilities in LHD with kinetic thermal ion effects	Auditorium
12:30	Jani Kompula	Ion heating characteristics in ST-40 tokamak merging experiment	Auditorium
13:00	Lunch		Canteen
14:00	Breakout Session	Energetic Particles	
14:00	Breakout Session	Astro	
15:30	Coffee Break		Foyer
16:00	Breakout Session	Turbulence	
16:00	Breakout Session	Reconnection	
17:30	Guided Tour through the Institute		Foyer
19:00	Meeting of the Steering Group		Intuu

Wednesday, 22 January 2020

09:00	Good Morning Coffee		Foyer
Chair	Greg Hammett		
09:30	Michael Wilczek	Persistent accelerations disentangle Lagrangian turbulence	Auditorium
10:00	Daniel Told	Development and first applications of a hybrid kinetic/gyrokinetic model	Auditorium
10:30	Kenji Imadera	Global profile formation and relaxation in flux-driven ITG/TEM turbulence	Auditorium
11:00	Coffee Break		Foyer
Chair	Anatoly Spitkovsky		
11:30	Takanobu Amano	Electron acceleration by collisionless shocks	Auditorium
12:00	Elena Amato	Non-linear effects in cosmic ray acceleration and transport	Auditorium
12:30	Gareth Roberg-Clark	Suppression of electron thermal conduction in galaxy clusters	Auditorium
13:00	Lunch		Canteen
14:00	Breakout Session	Astro	
	Breakout Session	Reconnection	
15:30	Coffee Break		Foyer
16:30	Stroll through Göttingen City Center		Blauer Turm
18:30	Dinner		DT

Thursday, 23 January 2020

09:00	Good Morning Coffee		Foyer
Chair	Volker Springel		
09:30	Steven Tobias	Direct statistical simulation approach for astrophysical objects	Auditorium
10:00	Jennifer Schober	Early-universe dynamo with chiral MHD	Auditorium
10:30	Andreas Lagg	The third flight of the Sunrise solar balloon telescope	Auditorium
11:00	Coffee Break		Foyer
Chair	Amitava Bhattacharjee		
11:30	Breakout Summeries		Auditorium
13:00	Lunch		Canteen
14:30	Guided Tour through Göttingen		City Center

TENTATIVE PROGRAM FOR THE BREAKOUT SESSIONS

Monday, 14:00-15:30

BREAKOUT TURBULENCE

Karen Pommois	Hybrid drift kinetic-kinetic implementations and simulations for uniform magnetized space plasma
Jason TenBarge	Diagnosing Local Particle Energization in Fully Kinetic, Continuum Simulations
Alexandr Mustonen	ssV: a hybrid semi-Lagrangian flux-conservative code and its fusion application
Ryusuke Numata	Gyro kinetic simulations of turbulent magnetic reconnection
BREAKOUT RECONNECTION	
Masahiro Hoshino	Magnetic Reconnection in Relativistic Astrophysical Plasmas
Gottfried Mann	Generation of energetic electrons in the magnetic reconnection outflow region
Patricio Munoz	Kinetic simulations of the radio signals generated by the electron beams caused by magnetic reconnection
Neeraj Jain	Current sheets in collisionless plasma turbulence

Monday, 16:00 – 17:30

BREAKOUT ASTRO

Atefeh Barekat	Generation of mean flows by anisotropic turbulence in the solar near-surface shear layer
Javier Vizoso	Dynamos and their origins in magnetised “burgulence”
Valentin Skoutnev	The shear current effect in the solar dynamo
Erik Gilson – remote	Status of Experiments, Simulations, and Modeling to Distinguish MRI from Competing Effects in the PPPL MRI Experiment
BREAKOUT STELLARATOR	
Adelle Wright	Dynamical accessibility of 3D helical states via relaxation of force-free axisymmetric equilibria
Gabriel Plunk	Deforming a tokamak into a quasi-axisymmetric stellarator
Ksenia Aleynikova	Taylor relaxation in W7-X
Daniel Kennedy	Magnetic confinement of electron-positron plasmas

Tuesday, 14:00-15:30

BREAKOUT ENERGETIC PARTICLES

Oliksiy Mishchenko	Fast particles in non-axisymmetric geometries
Xin Wang	Frequency chirping of non-perturbative energetic particle driven modes in fusion plasmas
Yasushi Todo	Interaction of fast ions with interchange modes in LHD plasmas

BREAKOUT ASTRO

Rüdiger Pakmor	Magnetising the circumgalactic medium of galaxies
Philipp Girichidis	New code for spectrally resolved cosmic ray hydrodynamics
Takaaki Yokoyama	MHD simulations of Parker instability with cosmic-ray pressure
Jin Matsumoto	MHD simulations of astrophysical jets with toroidal magnetic field reversals

Tuesday, 16:00 – 17:30

BREAKOUT TURBULENCE

Silvio Sergio Cerri	Ion heating in low-beta kinetic plasma turbulence
Tomo-Hiko Watanabe	Effects of kinetic ions on electron temperature gradient turbulence
Noah Mandell	Magnetic fluctuations in gyrokinetic simulations of tokamak SOL turbulence
Nobumitsu Yokoi	“Magnetoclinicity” effect in compressible magnetohydrodynamic turbulence
BREAKOUT RECONNECTION	
Yi-Min Huang	The plasmoid instability in partially ionized plasmas
Kendra Bergstedt (pres. by H. Ji)	Statistical properties of magnetic structures during turbulent reconnection in the Earth's magnetotail
Munehito Shoda	3D MHD simulations of the heating and acceleration of solar winds
Sayak Bose - remote	Structure of current sheet during guide field reconnection on MRX

Wednesday, 14:00-15:30

BREAKOUT ASTRO

Mohamad Shalaby	High order schemes for PIC simulations and TeV blazar applications
Artem Bohdan	Kinetic simulations of perpendicular SNR shocks
Vasileios Tsiolis	Electron heating in collisionless shocks
Martin Weidl	The non-beam-resonant Bell instability: From MHD to ion kinetics
Christoph Pfrommer	The role of cosmic-rays and magnetic fields in the cosmology of the plasma Universe

BREAKOUT RECONNECTION

L. Pradeep Chitta	Turbulent onset of fast magnetic reconnection in the solar atmosphere
Jörn Warnecke	Measuring turbulent diffusivities in simplified models of coronal loops
Hardi Peter	Turbulent reconnection and observed emission line profiles in the upper solar atmosphere