

29th Workshop on MHD Stability Control					
ID	Start	End	Wednesday 7/23	Thursday 7/24	Friday 7/25
Morning #1	8:30		TSD Workshop	Yokoyama Lunia Jiang Ren	Logan Chiriboga N. Wang Igochine
		10:00			
Coffee #1	10:00	10:30			
Morning #2	10:30			Waybright Phar Brennan Burgess	Liu Park Gan Power
		12:00			
Lunch	12:00	13:30			
Afternoon #1	13:30		Pigatto Sanpei Shinichiro Matsuyama	Poster / Group Photo	Boozer Furukawa Hartigan Farre Kaga
		15:00			
Coffee #2	15:00	15:30			
Afternoon #2	15:30		Kim Chandra W. Wang Leuthold		Tobin Kumar Lee Riquezes
		17:00			
Venue			Computer Science Building Room 104		
Princeton, New Jersey: July 23-25, 2025					
Invited talks	22 minutes	Uninterrupted			
Contributed talks	14 minutes	Uninterrupted			
Discussions	26 minutes	On all previous talks, including clarifying questions			
Lunch	90 minutes	Restaurants nearby			
Session title	Talk title		Chair		Assistant chair
Experiments A	13:30	15:00	Wednesday		
Pigatto	Plasma response models for RFX-mod2 operations with magnetic perturbations				
Sanpei	Correlation between sawteeth event and hollow SXR emissivity distribution in a low aspect ratio RFP				
Shinichiro	Investigation of non-axisymmetric structure formation in RELAX using SXR diagnostics				
Matsuyama	Plasmoid dynamics and magnetic disturbances after pellet injection in LHD				
Innovation	15:30	17:00	Wednesday		
Kim	A new dynamo theory based on Statistical State Dynamics				
Chandra	Synthetic diagnostic integration for automatic MHD mode labeling on SPARC				
W. Wang	Linear and nonlinear simulations of internal kink modes and associated energetic particle transport in SPARC using the M3D-C1 code				
Leuthold	MHD physics basis for ARC				
Session title	Talk title		Chair		Assistant chair
Experiments B	8:30	10:00	Thursday		
Yokoyama	Achieved milestones and disruption studies in the initial operation of JT-60SA				
Lunia	Toroidal mode number dependence of RMP ELM suppression in DIII-D				
Jiang	Error field measurements and validation with rotating RMP fields for DIII-D H-mode				
Ren	Measurement of the mode structures during locked mode disruptions on J-TEXT				
Theory A	10:30	12:00	Thursday		
Waybright	Extended drift MHD theory of resonant layer responses to non-axisymmetric magnetic perturbations				
Phar	Quantifying the resonant drive for magnetic islands in perturbed ideal, resistive, and kinetic MHD				
Brennan	Calculating the probability of locking to an error field for a saturated magnetic island surrounded by a resistive wall				
Burgess	Tearing stability prediction combining toroidal calculations with a two-fluid slab layer approximation				

Session title	Poster title		
Poster	13:30	17:00	Thursday
Arnold	Simulations of sawtooth activity with a resistive wall in the HBT-EP tokamak		
Benjamin	Towards calculation of minimum marginally stable island widths in a cross-machine tearing mode		
Elster	Equilibrium two-fluid effects on linear tearing mode stability		
Halpern	Determining the validity of tokamak perturbed equilibrium modeling using nonlinear equilibria		
Lee	Kinetic stability of negative-triangularity plasmas		
Rothstein	Assessing numerical stability of physics models to equilibrium variation through database		
Sheehan	Multi-machine analysis of impurity radiative collapse disruption prediction and event chain		
Takemura	Modeling the hysteresis in the amplitude–frequency relationship of MHD instabilities in toroidal magnetically confined plasmas		
Tillinghast	Automatic determination of magnetic island widths in DECAF and implicit analysis of the modified Rutherford equation		
Tomasina	Modeling RMPs impact on L-H power threshold in JT-60SA OP2 scenarios		
Wong	Reduced fast ion transport calculations of infernal-like fishbone instabilities in MAST-U		
Yang	Technology readiness assessment of magnetohydrodynamic stability control		
Session title	Talk title	Chair	Assistant chair
Experiments C	8:30	10:00	Friday
Logan	Resonant magnetic perturbation thresholds for ELM suppression		
Chiriboga	High speed plasma feedback system of n=1 MHD instabilities on HBT-EP using machine learning to couple optical diagnostics and magnetic control		
N. Wang	Trigger and enhancement of ITB by 3D MP and MHD modes on J-TEXT		
Igochine	Plasma effect on error fields correction at high β_N in ASDEX Upgrade		
Stellarator & Diver	10:30	12:00	Friday
Liu	Kinetic-MHD simulation of pressure-driven instabilities in stellarators using M3D-C1		
Park	Quasi-symmetric optimization of 3D magnetic perturbations		
Gan	MHD-Induced SOL filaments and divertor heat flux striations in NSTX		
Power	Simulations of the “churning mode” in snowflake divertors using reduced-MHD models		
Theory B	13:30	15:00	Friday
Boozer	Magnetic field line chaos and MHD in toroidal plasmas		
Furukawa	Equilibrium analysis of single-helicity, incompressible MHD		
Hartigan	Effects of a two-fluid model on RF current condensation		
Farre Kaga	Interpreting AI for fusion: An application to plasma profile analysis for tearing mode stability		
Forecasting	15:30	17:00	Friday
Tobin	Real-time observation of toroidal current redistributions induced by three-dimensional MHD phenomena triggering vertical displacement events for disruption avoidance		
Kumar	Physics-guided deep learning surrogate for real-time control of vertical stability in tokamak plasmas		
Lee	Development of a neural network algorithm for classifying NTM formation in KSTAR ECEI data for Disruption Event Characterization and Forecasting (DECAF)		
Riquezes	Rotating MHD mode lock and disruption forecaster with real-time feedback on KSTAR		