PROGRAM

TORINO 2023 FUNDAMENTAL PLASMA PHYSICS

Wednesday 21 June - Morning

8:00	*Registration opens at Castello del Valentino*	
8:45	*Welcome – Franco Porcelli*	
9:00 – 9:30	**Luca Garzotti** (UKAEA Culham Lab, UK)	**Overview of physics results from the deuterium-tritium DTE2 campaign on JET**
9:30 – 10:00	**Gabriele Grittani** (ELI-Beamlines, Czech Republic)	**Laser plasma electron acceleration at ELI-Beamlines**
10:00 - 10:30	**Luis L. Alves** (Instituto de Plasmas e Fusao Nuclear, Portugal)	**Making a case for open-source codes: the example of the LisbOn KInetics tool**
10:30 - 11:00	**Daniela Grasso** (Institute of Complex Systems, CNR, Italy)	**Magnetic and fluid instabilities effects on collisionless plasma turbulence**
11:00 – 11:30	*Coffee break*	
11:30 - 12:00	**Kunioki Mima** (Osaka University, Japan)	**Laser Plasma Physics for Fast Ignition**
12:00 - 12:30	**Olga Alexandrova** (LEISA Observatoire de Paris, France)	**Coherent structures from MHD to kinetic scales in solar wind turbulence at 0.17 and 1 au**
12:30 - 13:00	**Omar Biondo** (University of Antwerpen, Belgium)	**Towards a fundamental understanding of energy-efficient, plasma-based CO2 conversion**
13:00 - 14:00	*Lunch Break – Sala delle Colonne, Castello del Valentino*	

Magnetic fusion · Low temperature plasma · Nonlinear plasma dynamics · Laser plasma + inertial fusion · Plasma astrophysics and space · Complex plasmas, new emerging plasma topics, QED

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TORINO 2023 FUNDAMENTAL PLASMA PHYSICS

Wednesday 21 June - Afternoon/Evening

14:00 – 14:30	*Opening Ceremony, with* *Paolo Fino, Director of the Department of Applied Science and Technology Politecnico di Torino;* *Bruno Panella, Emeritus of Nuclear Energy Engineering, Politecnico di Torino;* *Stefano Lo Russo, Mayor of Torino*	
14:30 - 15:00	**Philippa Browning** (Manchester University, UK)	**From kink instability to magnetic reconnection to oscillations in solar flares**
15:00 - 15:30	**Boris Breizman** (University of Texas, USA)	**Magnetic Nozzle: Plasma Acceleration and Detachment Scenario**
15:30 – 16:00	*Coffee break*	
16:00 - 16:30	**Tommaso Andreussi** (Sant'Anna School of Advanced Studies & University of Pisa, Italy)	**Air-breathing electric propulsion and the BREATHE project**
16:30 - 17:00	**Amita Das** (Indian Inst. of Technology, India)	**Collective Dynamics in dusty plasma and dust particle clusters**
17:00 - 17:30	**Thierry Passot** (Université Côte d'Azur, France)	**Simulations of turbulence and reconnection with a 2-field gyrofluid model**
18:00 - 19:30	*Welcome party with buffet dinner, Castello del Valentino*	
	Guided tour of Castello del Valentino (two groups, approx 30 minutes per group)	
20:00 - 20:30	**Raffaele Marino** (Ecole Centrale de Lyon, France)	**Evolution of space plasma turbulence in the inner heliosphere**
20:30 - 21:00	**Patric Muggli** (Max-Planck-Institut für Physik, Germany)	**Beam-plasma interactions for particle acceleration and basic studies at AWAKE**

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Thursday 22 June - Morning

9:00 - 9:30	**Richard Fitzpatrick** (University of Texas, USA)	**Multi-harmonic Rutherford island theory**
9:30 - 10:00	**Wenchao Yan** (Shanghai Jiao Tong University, China)	**High-Field Physics Related to LWFA on Dual-Beam Ultrafast High-Power Lasers**
10:00 - 10:30	**Philippe Guittienne** (EPFL, Switzerland)	**Two-fluid solutions for Langmuir probes in collisionless and isothermal plasma, over all space and bias potential**
10:30 - 11:00	*Coffee break*	
11:00 - 11:30	**Giovanni Lapenta** (KU Leuven, Belgium)	**New approaches to connecting fluid and kinetic models based on implicit time discretization and machine learning**
11:30 - 12:00	**Katsuyoshi Tsumori** (National Institute for Fusion Studies, Japan)	**Highly Electronegative Plasmas Formed in a Negative Ion Source for NBI**
12:00 - 12:30	**Damiano Caprioli** (University of Chicago, USA)	**New Developments in Shock Acceleration Simulations and Theory**
12:30 - 13:30	*Lunch Break – Sala delle Colonne, Castello del Valentino*	
13:30 - 14:30	**Poster session – Sala delle Colonne, Castello del Valentino**	

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TORINO 2023 FUNDAMENTAL PLASMA PHYSICS

Thursday 22 June - Afternoon

14:30 - 15:00	**Sergei Bulanov** (ELI-Beamlines, Czech Republic)	**Gamma Ray Flash Generation in the Extreme Power Laser-Matter Interaction**
15:00 - 15:30	**Lorenzo Ibba** (EPFL, Switzerland)	**E-FISH: A Diagnostic for Spatially and Temporally Resolved E-Field Characterization in Low Temperature Plasma Discharges**
15:30 - 16:00	**Colby Haggerthy** (University of Hawaii, USA)	**Hydrodynamic Shock Modifications by the Heat Flux of Non-Thermal Particles**
16:00 – 16:30	*Coffee break*	
16:30 – 17:00	**Philip Morrison** (University fo Texas, USA)	**Regarding the general metriplectic formalism for describing dissipation and its computational uses**
17:00 - 17:30	**Vasily Kiptily** (JET Joint Undertaking, UK)	**Observation of fusion-bone alpha particles in Joint European Torus**
17:30 - 18:00	**Sabrina Grassini/Emma Angelini** (Politecnico di Torino, Italy)	**Low-temperature plasma technology for Cultural Heritage safeguard**
20:00	*Social dinner*	

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Friday 23 June - Morning

9:00 - 9:30	**Svetlana Starikovskaia** (Ecole Polytechnique, France)	**Nanosecond pulsed plasma: kinetics and applications**
9:30 - 10:00	**V. Ravishankar** (Indian Institute of Technology, India)	**Streaming instabilities in Yang Mills system**
10:00 - 10:30	**Lars-Goran Eriksson** (Chalmers University of Technology, Sweden)	**On the physics and modelling of the interaction between RF waves and resonating ions in tokamaks**
10:30 – 11:00	*Coffee break*	
11:00 - 11:30	**Francesco Valentini** (Università della Calabria, Italy)	**The numerical support to the Plasma Observatory ESA M7 candidate mission**
11:30 - 12:00	**Takayoshi Sano** (Osaka University, Japan)	**Relativistic wave-particle interaction under a strong magnetic field**
12:00 - 12:30	**Magali Muraglia** (Aix-Marseille Université, France)	**Multi-scales physics of magnetic reconnection in hot plasmas**
12:30	*Lunch Break – Sala delle Colonne, Castello del Valentino*	

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Friday 23 June - Afternoon

14:00 - 14:30	**Francois Waelbroeck** (University of Texas, USA)	**Compressible theory of unmagnetized islands in inhomogeneous plasma**
14:30 - 15:00	**Jiang Fuh Ong** (ELI-Nuclear Physics, Romania)	**The interaction of ultraintense short laser pulse with nanostructured target**
15:00 - 15:30	**Stéphane Mazouffre** (Institut de Combustion Aerothermique, CNRS, France)	**Study on the ion velocity distribution function in the magnetized plasma of electric thrusters**
15:30 – 16:00	*Coffee break*	
16:00 - 16:30	**Lorenzo Sironi** (Columbia University, USA)	**Fast and furious: reconnection-powered emission in black hole jets and coronae**
16:30 - 17:00	**Gerard van Rooij** (Maastrich University, Netherlands)	**Non-equilibrium Plasma for a Green Process Industry**
17:00 - 17:30	**Liming Chen** (Shanghai Jiao Tong University, China)	**Ultrahigh Charge Electron Acceleration for Nuclear Applications**
17:30 - 19:00	**Closing session – Round Table Discussion – Moderator: Franco Porcelli** **Panelists: Stéphane Mazzouffre, Giovanni Lapenta, Fulvio Militello and Kunioki Mima**	

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Poster Session

TORINO 2023 FUNDAMENTAL PLASMA PHYSICS

Thursday 22 June at 13:30

P1	**Subramanya Bhat** (Indian Institute of Technology, Delhi)	**Particle Drifts in the background of Classical Yang-Mills Fields**
P2	**Fulvio Militello** (UKAEA)	**Asymmetries in Tokamak's boundary plasmas and divertor design**
P3	**Leila Es Sebar** (Politecnico di Torino)	**Cleaning and protection by plasma technology of Portuguese oolitic limestone of Batalha Monastery in Portugal**
P4	**Leonardo Iannucci** (Politecnico di Torino)	**Plasma technology for corrosion protection of metals**
P5	**Zheng Chen** (Univ. of Science and Technology of China)	**The distribution of halo current using the Hodge decomposition of eddy currents on the Keda Torus eXperiment device**
P6	**Debabrata Banerjee** (Politecnico di Torino)	**Axi-symmetric modes in Straight Tokamak**
P7	**Ivo Furno** (Ecole Polytechnique Federale de Lausanne)	**Low-temperature plasmas for biological applications**
P8	**Luca Orusa** (Università degli Studi di Torino)	**Fast particle acceleration in 3D hybrid simulations of quasi-perpendicular shocks**
P9	**Anna Perona** (Istituto dei Sistemi Complessi - CNR and Politecnico di Torino)	**Electron dynamics and coherent structures in stochastic magnetic reconnection**
P10	**Lovepreet Singh** (Politecnico di Torino)	**Runaway Electron driven Magnetic reconnection**
P11	**Isabella Sannino** (Politecnico di Torino)	**Protection of Silver-based Alloys from Tarnishing by means of PECVD Coatings**