EFTC 2017

17th European Fusion Theory Conference

9 - 12 October 2017, Athens - Greece

List of presentations

The conference is organized by

National Program of Controlled Thermonuclear Fusion

Association EURATOM - Hellenic Republic

PCO CONVIN S.A.

Invited lectures

Tutorial lectures

[I.1] A P
Anne White (Massachusetts Institute of Technology, United States)
Comparing turbulence measurements with simulations: an experimental, multi-machine tutorial on validation of nonlinear gyrokinetic transport models

[I.2] A P
Francesco Pegoraro (Università di Pisa, Italy)
Stability criteria of MHD plasmas and their underlying Hamiltonian structure

[I.3] A P
Fulvio Zonca (ENEA Centro Ricerche Frascati, Italy)
Physics of energetic particles and Alfven waves

[I.4] A P
Felix Parra (University of Oxford, United Kingdom)
Neoclassical and turbulent transport in stellarators

Topical lectures

[I.5] A P
Aleksey Mishchenko (Max Planck Institut für Plasmaphysik, Germany)
Pullback approach for gyrokinetic electromagnetic simulations

[I.6] A P
Thomas Pütterich (Max Planck Institut für Plasmaphysik, Germany)
Impurities in a reactor

[I.7] A
Caterina Riconda (Université Pierre et Marie Curie, France)
Relativistic electron acceleration in laser plasma interaction

[I.8] A

George Wilkie (Chalmers University of Technology, Sweden)

First-principles modelling of fast ion transport by microturbulence

[I.9] A P

George Throumoulopoulos (University of Ioannina, Greece)

On equilibrium, stability and dynamics of ITER-like plasmas

[I.10] A P

Christopher Ham (Culham Centre for Fusion Energy, United Kingdom)

Theory of nonlinear ballooning modes

[I.11] A

Alessandro Zocco (Max Planck Institut für Plasmaphysik, Germany)

Geometric stabilization of the electrostatic ITG driven instability

[I.12] A

Xin Wang (Max Planck Institut für Plasmaphysik, Germany)

Nonlinear dynamics of EP-driven Alfvenic fluctuations in fusion plasmas

[I.13] A P

Taina Kurki – Suonio (Aalto University, Finland)

Clearing the road for high-fidelity fast ion simulations in full 3D

[I.14] A P

Yevgen Kazakov (ERM/KMS Brussels, Belgium)

Recent advances in fast ion generation and plasma heating with IC waves

[I.15] A

Arturo Alonso (CIEMAT Madrid, Spain)

Zonal flow relaxation in stellarators

[I.16] A P

Alessandro Geraldini (University of Oxford, United Kingdom)

Kinetic solution of a collisionless magnetic presheath

[I.17] A P

Rogerio Jorge (École Polytechnique Fédérale de Lausanne, Switzerland)

An analytical model for SOL plasma dynamics at arbitrary collisionality

Oral presentations

[O.1] A P
Heinz Isliker (Aristotle University of Thessaloniki, Greece)
Fractional transport in strongly turbulent plasmas

[O.2] A P
Maurizio Ottaviani (Institut de Recherche sur la Fusion Magnétique, France)
Fast secondary reconnection and the sawtooth crash

[O.3] A
Emiliano Fable (Max Planck Institut für Plasmaphysik, Germany)
Integrated modelling of reactor scenarios and impact of core-SOL coupling on plasma performance

[O.4] A P
Carrie Beadle (École Polytechnique Fédérale de Lausanne, Switzerland)
Simulations of SOL turbulence in a double-null magnetic configuration

[O.5] A
Vinodh Bandaru (Max Planck Institut für Plasmaphysik, Germany)
Implementation of a model for the non-linear interaction between runaway electrons and background plasma

[O.6] A P
Noe Ohana (École Polytechnique Fédérale de Lausanne, Switzerland)
The Particle-in-Fourier (PIF) Approach applied to gyrokinetic simulations

[O.7] A P
Francesco Palermo (Max Planck Institut für Plasmaphysik, Germany)
Damping and propagation of GAMs in gyrokinetic simulations

[O.8] A
Zhixin Lu (Max Planck Institut für Plasmaphysik, Germany)
Local and global analysis of symmetry breaking for ITG and BAE modes

[O.9] A

Marcus Held (University of Innsbruck, Austria)

Zonal flow generation by nonlinear polarization and high relative fluctuation amplitudes

[O.10] A P

Calin Atanasiu (Institute for Laser, Plasma and Radiation Physics, Romania)

Modelling of wall currents excited by plasma wall-touching kink and vertical modes during a tokamak plasma disruption with application to ITER

Poster presentations

Session 1 (10/10/17, 15.00 – 17.00)

[P1.1] A P
Ian Abel (Chalmers University of Technology, Sweden)
Kinetic modelling of the edge of fusion plasmas

[P1.2] A
Elnaz Safi (University of Helsinki, Finland)
Plasma impurity co-bombardment effects on sputtering of Beryllium and Tungsten

[P1.3] A P
Daniela Grasso (Polytecnico di Torino, Italy)
ECCD magnetic island suppression as converse of a forced reconnection problem

[P1.4] A P
Ajay Jayalekshmi – Chandrarajan (École Polytechnique Fédérale de Lausanne, Switzerland)
How non-adiabatic passing electron dynamics and density of mode rational surfaces affect turbulent transport in magnetic fusion plasmas

[P1.5] A P
Dick Hogeweij (Dutch Institute for Fundamental Energy Research, Netherlands)
Separating the effects of heating and current drive on NTM evolution in TCV

[P1.6] A P
Dimitris Kaltsas (University of Ioannina, Greece)
Hamiltonian construction of translationally symmetric extended MHD with equilibrium applications

[P1.7] A
Jason Parisi (University of Oxford, United Kingdom)
Extending critical balance to ITG with flow shear in fusion plasmas

[P1.8] A P
Tünde Fülöp (Chalmers University of Technology, Sweden)
Runaway dynamics in disruptions: sliding and screening

[P1.9] A
Samuel Lanthaler (École Polytechnique Fédérale de Lausanne, Switzerland)
Linear kinetic – magnetohydrodynamic stability of internal modes in toroidally rotating plasmas

[P1.10] A
Ivan Calvo (CIEMAT Madrid, Spain)
Tangential magnetic drift, tangential electric field and their impact on stellarator radial neoclassical transport

[P1.11] A
Pierre Manas (Max Planck Institut für Plasmaphysik, Germany)
Energy confinement in He and D plasmas: on the role of central electron heating

[P1.12] A
Aristeides Papadopoulos (National Technical University of Athens, Greece)
Propagation of radio frequency waves through spatially modulated interfaces in the plasma edge in tokamaks

[P1.13] A
Alessandro Cardinali (ENEA Centro Ricerche Frascati, Italy)
Semi-analytical inspection of the quasi-linear absorption of RF in presence of alpha-particles in tokamak reactor

[P1.14] A
Andreas Kleiner (École Polytechnique Fédérale de Lausanne, Switzerland)
Ideal saturated 3D external kink structures in quiescent H mode plasmas

[P1.15] A P
Achilleas Evangelias (University of Ioannina, Greece)
Analytic anisotropic-pressure equilibria with incompressible flow in helically symmetric geometry

[P1.16] A

Emmanuel Lanti (École Polytechnique Fédérale de Lausanne, Switzerland)

An improved hybrid electron model for global gyrokinetic simulations using the ORB5 PIC code

[P1.17] A

Yanick Sarazin (Institut de Recherche sur la Fusion Magnétique, France)

Multi-scale issues in fusion plasmas: synergy between turbulence and neoclassical transports

[P1.18] A

Michail Anastopoulos – Tzanis (University of York, United Kingdom)

3D perturbative ideal MHD stability in tokamak plasmas

[P1.19] A

Herve Guillard (Institut National de Recherche en Informatique et en Automatique, France)

Grid generation for fusion applications

[P1.20] A P

Virgil Baran (Institute for Laser, Plasma and Radiation Physics, Romania)

Evolving the ITG driven turbulence with test modes

[P1.21] A P

Spyridon Aleiferis (Foundation of Research and Technology Hellas, Greece)

On the gradB and ExB drifts of alphas in burning plasmas

[P1.22] A

Dario Borgogno (Polytecnico di Torino, Italy)

Test-electron analysis of magnetic reconnection topology

Session 2 (11/10/17, 15.00 – 17.00)

[P2.1] A

Pavlos Xanthopoulos (Max Planck Institut für Plasmaphysik, Germany)
Gyrokinetic simulation of micro-turbulence in stellarators

[P2.2] A P

Daniele Brunetti (Istituto Fisica del Plasma, Italy)
Analytic characterisation of infernal type instabilities in tokamak as with large edge pressure gradients

[P2.3] A P

Allah Rakha (Barcelona Supercomputing Center, Spain)
Modelling of Alfvén modes properties in TJ-II plasmas

[P2.4] A

Stefan Buller (Chalmers University of Technology, Sweden)
Ion composition effects on neoclassical transport in density pedestals

[P2.5] A

Loukas Vlahos (Aristotle University of Thessaloniki, Greece)
On the limits of the quasilinear evolution of ions interacting with Alfven waves in a magnetised plasma

[P2.6] A

Ksenia Aleynikova (Max Planck Institut für Plasmaphysik, Germany)
Quantitative study of kinetic ballooning mode theory in magnetically confined toroidal plasmas

[P2.7] A

Fotis Bairaktaris (National Technical University of Athens, Greece)
Advanced homogenization approach for a plasma dielectric mixture: Case of a turbulent tokamak

[P2.8] A

Hugo de Blank (Dutch Institute for Fundamental Energy Research, Netherlands)
Electromagnetically consistent model of complete reconnection

[P2.9] A P
Iulian Miron (Institute for Laser, Plasma and Radiation Physics, Romania)
Modelling the effect of resonant magnetic perturbations on neoclassical tearing modes

[P2.10] A
Alessandro Biancalani (Max Planck Institut für Plasmaphysik, Germany)
Nonlinear gyrokinetic investigation of energetic particle-driven geodesic acoustic modes

[P2.11] A P
Eduard Reiter (University of Innsbruck, Austria)
Full-F gyrofluid modelling of blob-impurity interaction in the tokamak SOL

[P2.12] A P
Laurent Villard (École Polytechnique Fédérale de Lausanne, Switzerland)
Global features of gyrokinetic simulations with sources

[P2.13] A P
Fabien Widmer (Institut de Recherche sur la Fusion Magnétique, France)
Neoclassical island control with stiff temperature model

[P2.14] A
Nathan Howard (Massachusetts Institute of Technology, United States)
Multi-scale gyrokinetic simulation of L and H-mode plasma conditions in the Alcator C-Mod tokamak

[P2.15] A
Michael Hardman (University of Oxford, United Kingdom)
Modelling coupled ion and electron scale turbulence in magnetic confinement fusion plasmas

[P2.16] A P
Iason Valvis (National Technical University of Athens, Greece)
Scattering of radio frequency waves by cylindrical blobs in the plasma edge in tokamaks

[P2.17] A

Konsta Särkimäki (Aalto University, Finland)

Mechanics of ELM control coil induced alpha particle transport

[P2.18] A P

Stefan Mijin (Imperial College London, United Kingdom)

A fully implicit kinetic code for parallel electron transport in the SOL

[P2.19] A P

Peter Donnel (Institut de Recherche sur la Fusion Magnétique, France)

A multi-species collision operator for gyrokinetic codes

[P2.20] A

Klaus Hallatschek (Max Planck Institut für Plasmaphysik, Germany)

Study of collisional effects on GAMs and zonal flows

[P2.21] A

Paulo Rodrigues (Instituto Superior Technico Lisboa, Portugal)

Local, up-down asymmetrically shaped, analytical tokamak-equilibrium model

[P2.22] A

Chris Dritselis (University of Thessaly, Greece)

Numerical modeling of dust transport in a tokamak plasma