

# 2<sup>nd</sup> EFDA TTG Workshop, 16<sup>th</sup> to 18<sup>th</sup> of September, JET

## 1st day (Wednesday 16<sup>th</sup>)

08.30 08.50 Welcome, Introduction and presentation  
of the EFDA TTG activities and research projects

### Session on long range correlations (Chair C. Hidalgo)

08.50 09.20 Introduction / Review, C. Hidalgo

#### 09.20 10.20 Experimental results

09.20 09.30 M. A. Pedrosa, Long-range correlations during edge plasma transitions in TJ-II

09.30 09.40 P. Manz, Long-range correlations and multi-scale physics in TJ-K

09.40 09.50 Y. Xu, Investigation of long-distance correlation of edge turbulence at TEXTOR

09.50 10.00 G. Conway, Correlation and structure of edge ExB flow and density perturbations in ASDEX Upgrade

10.00 10.10 C. Silva, Experimental evidence of coupling between local transport and large scale fluctuations in ISTTOK

10.10 10.20 K.J. Zhao, L. Yan, Experiment progresses in long range correlation studies of zonal flow and GAMs in the edge plasma of HL-2A tokamak

#### 10.20 10.35 Coffee break

#### 10.35 10.55 Simulations

10.35 10.45 G. Falchetto, Long-distance correlations in flux-driven ITG

10.45 10.55 M. Hoffmann, Correlations in the edge of fusion plasmas

#### 10.55 11.05 Diagnostic developments

10.55 11.05 L. Vermare, Role of Turbulence and long-range correlations during the development of edge transport barriers, Reflectometry in TORE SUPRA

11.05 11.10 S. Zolotnik, Coordinated diagnostic developments for Beam Emission Spectroscopy

11.10 11.50 Discussion

### Session on Rotation / Poloidal rotation at the edge (Chair B. Duval)

11.50 12.20 Introduction / Review

12.20 12.30 K. Crombe, JET poloidal rotation measurements

12.30 12.40 A.R. Field, N. Conway, Comparison of Measured Poloidal Rotation in MAST Plasmas with Neo-Classical Predictions

**12.40 14.00 Lunch**

14.00 14.10 A. Kraemer-Flecken, Poloidal Rotation Measurements at TEXTOR  
14.10 14.25 T. Puetterich, Measurements of  $E_r$  and rotation profiles at the edge of AUG plasmas  
14.25 14.35 H. Meyer, Edge Electric Field and Velocity Measurements on MAST  
14.35 14.45 C. Bourdelle, Neoclassical predictions for momentum  
14.45 14.55 K.G. McClements, Orbital dynamics and collisional transport of massive impurity ions in rotating plasmas  
14.55 15.05 C. Fenzi-Bonizec, On Plasma Rotation in Tokamak with Magnetic Field Ripple  
15.05 15.15 Y. Sarazin, Rotation Issues in Gyrokinetic Simulations of Turbulent Transport with Collisions  
15.15 15.25 M. Haines, Some Mechanisms for Intrinsic Rotation in Tokamaks  
15.25 15.35 O. Gurcan, Intrinsic Rotation: The Role of Intensity Gradient  
15.35 15.40 P. Mantica, Recent progress on the interpretation and modelling of perturbative experiments of toroidal momentum transport

**15.40 16.00 Coffee break**

16.00 16.10 A.G. Peeters, On poloidal rotation  
16.10 16.40 Discussion

**Programmatic discussion on L-H transition / Pedestal / RMPs / ELMs**

16.40 18.45 (Chair C. Hidalgo)

16.40 17.10 Triggering of the L-H transition

16.40 16.50 T. Estrada, Dynamics of mean and oscillating sheared flows at the L-H transition measured by Doppler reflectometry

16.50 17.00 B.D. Scott, Gyrokinetic edge turbulence and equilibrium flows

17.00 17.10 Discussion

17.10 17.45 Multi-machine experiments and pedestal width physics

17.10 17.20 M. Beurskens, Comments on JET pedestal physics

17.20 17.25 J. Weiland, Edge barrier simulations

17.25 17.35 S. Sen, Effect of Inhomogeneous Flow on ITG-like Instabilities in Tokamaks

17.35 17.45 Discussion

17.45 18.15 L-H power threshold and ELM control techniques

17.45 17.55 S. Soldatov, Turbulence and ELM dynamics in limiter H-mode plasmas with and without RMP in TEXTOR

17.55 18.05 A. Kirk, Comments on interplay L-H transition and ELM control techniques

18.05 18.15 Discussion

18.15 18.35 Multi-scale mechanism in the L-H transition

18.15 18.25 D. Told (F. Jenko), Gyrokinetic simulations of heat and particle transport in the tokamak edge

18.25 18.35 Discussion

18.35 18.45 Role of atomic physics mechanisms

18.35 18.45 Discussion

## **2nd day (Thursday 17<sup>th</sup>)**

### **Session on Edge / SOL : Problems in determining particle and heat fluxes to the first wall (Chair A. Kirk)**

08.30 09.20 Introductions / Reviews

08.30 08:50 S. Wiesen, Posed problems in 2D fluid modelling to estimate fluxes on walls

08.50 09.10 V. Naulin, Theoretical calculations of particle and heat fluxes

09.10 09:30 P. Tamain, Problems in experimentally determining the flux to the wall

09.30 11.35 Contributed talks

09.30 09.40 H.W. Mueller, Electron temperature measurements with high time resolution in the SOL of ASDEX Upgrade

09.40 09.50 J. Horacek, Fast electron temperature measurements in SOL of ASDEX Upgrade

09.50 10:00 A.H. Nielsen, Investigations of parallel dynamics in the ESEL model

10.00 10.20 N. Vianello, Characterisation of filament structures on RFX and AUG

### **10.20 10.35 Coffee Break**

10.35 10.45 R. Schrittwieser, Measurements of turbulent particle and momentum flux in ASDEX Upgrade

10:45-10:55 B. Nold, Turbulent fluctuation measurements in TJ-K and ASDEX Upgrade

10:55-11:05 M. Agostini, Thermal Helium Beam diagnostics for the studies of turbulence and coherent structures in the edge of fusion plasmas

11:05-11:15 D. Carralero Ortiz, First wall influx observation with visible fast cameras

11:15-11:25 T. Windisch, Shear decorrelation of turbulence structure

11:25-11:35 F. Spineanu, Filamentation of a strongly sheared rotation layer

11.35 12.10 Discussion

### **Session on Core Impurity Transport (Chair C. Giroud / C. Angioni)**

12.10 12.40 Introduction / Review C. Giroud / C. Angioni

### **12.40 14.10 Lunch**

14.10 15.10 Theoretical and experimental results

14.10 14.20 S. Moradi, Charge dependence of impurity peaking factor

14.20 14.30 R. Guirlet, D. Villegas, Experimental tests of impurity transport models

14.30 14.40 M. Sertoli, Argon transport studies in EC heated L-mode discharges on ASDEX Upgrade  
14.40 14.50 I. Predebon, M. Valisa, Radio-frequency power injection and impurity profile control in JET  
14.50 15.00 J. Stober, Observations on the relation between central heating and impurity accumulation in ASDEX Upgrade  
15.00 15.10 C. Giroud, Recent impurity transport experiments on JET

15.10.15.40 Discussion C. Angioni / C. Giroud

### **15.40 16.00 Coffee Break**

### **Programmatic discussion on Small scale fluctuation measurements / Electron transport (Chair C. Bourdelle)**

16.00 16.30 Introduction/Review, P. Hennequin  
16.30 16.40 C. Michael, Consideration of fast ion D alpha and CO2 laser phase contrast imaging diagnostics on MAST  
16.40 16.50 A. Pochelon, Plasma turbulence studied by means of Correlation-ECE in the TEM domain in TCV  
16.50 17.20 Discussion

### ***Workshop Dinner at The Head of the River (Folly Bridge, Oxford)***

## **3rd day (Friday 18<sup>th</sup>)**

### **Session on test particle behaviour (Chair A. Fasoli / U. Stroth)**

08.30 08.40 Introduction to the Session, U. Stroth / A. Fasoli  
08.40 09.10 Test particle physics: general aspects, J.J. Rasmussen

### **09.10 10.00 Thermal particles - High temperature plasmas**

09.10 09.20 G. Sanchez-Burillo, Tracer particle analysis in L and H mode simulations  
09.20 09.30 R. Sanchez, Understanding the mechanism of radial subdiffusion across zonal flows in gyro-kinetic simulations of tokamak ITG turbulence  
09.30 09.40 S. Zoletnik, Micro-pellet injection as a trace particle source  
09.40 09.50 N. Tamura, Exp. Verification of a non-diffusive transport mechanism under the international collaboration between Japan and EU  
09.50 09.55 H. Weisen, Test particles and “conventional” particle and impurity transport experiments

### **09.55 10.10 Thermal particles - Basic experiments**

09.55 10.05 G. Bonhomme, Fast camera imaging  
10.05 10.10 I. Furno

10.10 10.20 M. Vlad, Test particles, large scale correlations, and zonal flow generation

**10.20 10.35 Coffee break**

10.35 10.55 Suprathermal particles - High temperature plasmas

10.35 10.45 F.Jenko, Turbulent transport of energetic particles

10.45 10.50 G. Steinbrecher, B. Weyssow, Heavy tail in edge plasma turbulence

10.50 10.55 S. Sharapov

10.55 11.15 Suprathermal particles - Basic expts

10.55 11.15 I.Furno and Paolo Ricci, Sources and detectors of fast ions for basic devices,  
Simulation of turbulence and fast ion dynamics in the basic plasma physics  
experiment TORPEX and comparison with experimental results

11.15 12.10 Discussion

12.10 13.10 **Final Programmatic Discussion / Definition of actions**

Presentation and discussion of future activities for future  
research programs, resolutions and definition of actions

13.10 Lunch / Adjourn