

TURBULENCE AND ANOMALOUS TRANSPORT IN MAGNETIZED PLASMAS

C O N T E N T S

	Pages
Introduction	11
Workshop's participants picture	16
CHAPTER I : CONFINEMENT AND TRANSPORT	19
1.1 (Invited paper) D.C. Robinson Confinement and electrostatic and electromagnetic fluctuations	21
1.2 (Invited paper) J.W. Connor Invariance principles and scaling laws for anomalous transport	53
1.3 J.Y. Hsu and M.S. Chu Minimum energy state of MHD equilibria	73
1.4 M.A. Dubois and M. Pain Profile consistency and non local transport	77
1.5 S.C. Cowley, C.M. Bishop, J.W. Connor and R.J. Hastie Momentum transport in tokamaks	83
1.6 M. Tuszewski Anomalous transport in field-reversed configurations	87
CHAPTER II : DENSITY FLUCTUATIONS	91
2.1 (Invited paper) C.M. Surko Density fluctuations in tokamak plasmas. After a decade of research, what can we say ?	93
2.2 A. Côté and D.E. Evans Far forward scattering on TOSCA tokamak using a detector array	111
2.3 A.A. Howling and D.C. Robinson Turbulent transport in the TOSCA tokamak	115
2.4 R.D. Bengston, R.V. Bravenec, D.L. Brower, P.H. Diamond, K.W. Gentle, C.C. Klepper, N.C. Luhmann Jr., W.A. Peebles, P.E. Phillips, E.J. Powers, T.L. Rhodes, B. Richards, Ch.P. Ritz, W.L. Rowan and A.J. Wootton Fluctuations and transport measurements in the TEXT tokamak	121

2.5 E. Holzhauer, G. Dodel, J. Massig, T. Vogel, P. Ignacz, ASDEX-, ICRH-, LH-, and Pellet Teams FIR laser scattering from low frequency fluctuations on ASDEX	137
2.6 TFR Group and A. Truc (presented by J. Olivain) Correlation between low frequency turbulence and energy confinement in TFR	141
2.7 TFR Group and D. Gresillon (presented by B. de Gentile) Electron density fluctuations enhancement during internal disruptions, observed by microwave scattering in TFR	145
 CHAPTER III : MAGNETIC FLUCTUATIONS AND TRANSPORT	 153
3.1 (Invited paper) R.B. White Transport in systems with destroyed magnetic flux surfaces	155
3.2 (Invited paper) Ch. Hollenstein, R. Keller, A. Pochelon, F. Ryter, M.L. Sawley, W. Simm and H. Weisen Broadband magnetic and density fluctuations in the TCA tokamak	181
3.3 P.A. Duperrex and M. Malacarne Magnetic fluctuations and confinement in JET	197
3.4 M. Malacarne and P.A. Duperrex Observations of turbulence in the JET tokamak	201
3.5 A. Thyagaraja and F.A. Haas Relationship between charged particle trajectories and magnetic field lines	205
3.6 J. Elaoufir, A. Mangeney, C.C. Harvey, L. Guerin, T. Passot, and C.T. Russel Nonlinear MHD waves generated by reflected protons from the earth's bow shock	209
3.7 D.C. Robinson Overview of the working session on transport	221
 CHAPTER IV : THEORETICAL MODELS	 225
4.1 (Invited paper) A. Samain, X. Garbet and F. Mourguès Microtearing modes	227
4.2 (Invited paper) D. Biskamp Numerical simulation of drift wave turbulence	239
4.3 P.H. Diamond, G.S. Lee, N. Mattox and P.T. Katt Ion pressure gradient driven turbulence : theory and consequences	261

4.4 P.W. Terry, P.H. Diamond and T.S. Hahm	267
Localized fluctuations in inhomogeneous plasma turbulence : structure, dynamics, relaxation and transport	
4.5 B.D. Scott, P.W. Terry and P.H. Diamond	271
Turbulent drift wave dynamics and coherent structure	
4.6 S. Briguglio, F. Romanelli, G. Vlad and F. Zonca	275
Finite Beta effects on current driven drift waves	
4.7 K. Grassie, G. Becker, O. Gruber, O. Klüber, K. Lackner, J.E. Lee and H.P. Zehrfeld	279
Stability analysis of Asdex discharges	
4.8 E.K. Maschke and B. Saramito	285
Turbulence and Transport associated with saturated tearing modes	
CHAPTER V : PROSPECTIVE CONCEPTS	291
5.1 (Invited paper)	
T.M. O'Neil, C.F. Driscoll and D.H.E. Dubin	293
Like particle transport : a new theory and experiments with pure electron plasmas	
5.2 F. Doveil, S.I. Tsunoda and J.H. Malmberg	309
Experimental observations of mode coupling effects neglected in quasilinear theory	
5.3 P.J. Van de Mortel and D.C. Schram	315
Collective scattering and optical probing as turbulence diagnostics	
5.4 H.L. Pcseli and J. Trulsen	319
Conditional sampling in plasma turbulence	
5.5 T. Lehner	323
How to measure magnetic fluctuations in a tokamak : a proposal	
5.6 C.M. Surko, M. Leventhal, W.S. Crane, A. Passner and F.J. Wysocki	327
The use of positrons to study transport in tokamak plasmas.	
List of participants to Cargèse 86 meeting	329
Authors index	335