

Printed from e-media with permission by:

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571

CURRAN ASSOCIATES INC.  
**proceedings**  
.com

Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2016) by European Physical Society (EPS)  
All rights reserved.

Printed by Curran Associates, Inc. (2016)

For permission requests, please contact European Physical Society (EPS)  
at the address below.

European Physical Society (EPS)  
6 Rue des Freres Lumiere  
68200 Mulhouse  
France

Phone: 33 389 32 94 40  
Fax: 33 389 32 94 49

www.eps.org

Additional copies of this publication are available from:

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571 USA  
Phone: 845-758-0400  
Fax: 845-758-2633  
Email: curran@proceedings.com  
Web: www.proceedings.com

## TABLE OF CONTENTS

### PART 1

<b>ION CYCLOTRON EMISSION IN THE PRESENCE OF BEAM ION LOSSES</b> .....	1
<i>Pace, D.C.; Heidbrink, W.; Pinsker, R.; Van Zeeland, M.; Zhu, Y.</i>	
<b>MULTI-MACHINE EXPERIMENTS TO STUDY THE PARAMETRIC DEPENDENCES OF MOMENTUM TRANSPORT AND INTRINSIC TORQUE</b> .....	5
<i>Tala, T.; Chrystal, C.; McDermott, R.; Pehkonen, S.; Salmi, A.; Angioni, C.; Barnes, M.; Duval, B.; Giroud, C.; Grierson, B.; Guttenfelder, W.; Ferreira, J.; Hillesheim, J.; Kaye, S.; Mantica, P.; Maslov, M.; Menmuir, S.; Parra, F.; Petty, C.; Putterich, T.; Rice, J.; Ryter, F.; Solomon, W.; Tardini, G.; Tsalas, M.; Weisen, H.; Yoshida, M.</i>	
<b>MAGNETIC FLUX SURFACE MEASUREMENTS AT WENDELSTEIN 7-X</b> .....	9
<i>Otte, M.; Andreeva, T.; Biedermann, C.; Bozhakov, S.; Bykhov, V.; Brauer, T.; Endler, M.; Geiger, J.; Kocsis, G.; Lazerson, S.; Szepesi, T.; Pederson, T.</i>	
<b>POWER BALANCE ANALYSIS OF WENDELSTEIN 7-X PLASMAS USING PROFILE DIAGNOSTICS</b> .....	13
<i>Bozhakov, S.; Fuchert, G.; Niemann, H.; Beurskens, M.; Feng, Y.; Ford, O.; Geiger, J.; Hirsch, M.; Hoefel, U.; Jakubowski, M.; Knauer, J.; Kornejev, P.; Langenberg, A.; Laqua, H.; Maassberg, H.; Marushchenko, N.; Moseev, D.; Pablant, N.; Pasch, E.; Rahbarnia, K.; Stange, T.; Svensson, J.; Trimino Mora, H.; Valson, P.; Wurden, G.; Zhang, D.; Wolf, R.</i>	
<b>CORE CONFINEMENT IN WENDELSTEIN 7-X LIMITER PLASMAS</b> .....	17
<i>Dinklage, A.; Alonso, A.; Balduhn, J.; Beidler, C.; Biedermann, C.; Blackwell, B.; Bozhakov, S.; Brakel, R.; Buttenschön, B.; Feng, Y.; Fuchert, G.; Geiger, J.; Helander, P.; Hirsch, M.; Hoefel, U.; Knauer, J.; Krämer-Flecken, A.; Langenberg, A.; Laqua, H.; Landremann, M.; Maaßberg, H.; Pablant, N.A.; Pasch, E.; Rahbarnia, K.; Rudischhauser, L.; Stange, T.; Stephey, L.; Trimino-Mora, H.; Turkin, Y.; Velasco, J.; Wurden, G.; Zhang, D.; Andreeva, T.; Beurskens, M.; Blanco, E.; Bosch, H.; Burhenn, R.; Cappa, A.; Czarnecka, A.; Dostal, M.; Drews, P.; Endler, M.; Estrada, T.; Fornal, T.; Grulke, O.; Hartmann, D.; Harris, J.H.; Jakubowski, M.; Klingner, T.; Klose, S.; Kocsis, G.; König, R.; Kornejev, P.; Krawczyk, N.; Krychowiak, M.; Kubkowska, M.; Książek, I.; Lazerson, S.; Liang, Y.; Liu, S.; Marchuk, O.; Marsen, S.; Marushchenko, N.; Moncada, V.; Moseev, D.; Niemann, H.; Otte, M.; Pedersen, T.S.; Pisano, F.; Risse, K.; Rummel, T.; Schmitz, O.; Satake, S.; Smith, H.; Schröder, T.; Szepesi, T.; Thomsen, H.; Traverso, P.; Tsuchiya, H.; Valson, P.; Wang, N.; Wauters, T.; Weir, G.; Wolf, R.; Yokoyama, M.</i>	
<b>DECREASING DIVERGENCE AND ENHANCING PARTICLE NUMBER OF LASER-DRIVEN ION BEAMS BY VARIOUS TARGET DESIGNS AND LASER PARAMETERS</b> .....	21
<i>Žaková, M.; Pšikal, J.; Margarone, D.; Korn, G.</i>	
<b>PHYSICAL BASIS AND TOPICAL APPLICATIONS OF A NEW TYPE GAS DISCHARGE EXCITED BY POWERFUL PULSE MICROWAVE BEAMS IN THE HIGH-PRESSURE GASES</b> .....	25
<i>Kossyi, I.A.; Batanov, G.; Berezhetskaya, N.; Davydov, A.; Sarkisyan, K.; Kharchev, N.</i>	
<b>PLASMA-CATALYTIC HYBRID PROCESS FOR CO<sub>2</sub> METHANATION</b> .....	29
<i>Benrabbah, R.; Nizio, M.; Cavadias, S.; Tatoulian, M.; Galvez, M.; Da Costa, P.</i>	
<b>MODELING AND CHARACTERIZATION OF A HIGH-POWER X-RAY GAS ABSORBER</b> .....	33
<i>Martin Ortega, Á.; Lacoste, A.; Béchu, S.; Bès, A.; Minea, T.</i>	
<b>EFFECT OF BREMSSTRAHLUNG EMISSION ON FAST ELECTRONS IN PLASMAS</b> .....	37
<i>Embreus, O.; Stahl, A.; Füllöp, T.</i>	
<b>STRONG DRIVE REGIME STUDIES TO IMPROVE ANTIHYDROGEN PRODUCTION AT THE ALPHA EXPERIMENT AT CERN</b> .....	41
<i>Carruth, C.; Fajans, J.</i>	
<b>MOLECULAR COLLISION DATA FOR HYDROGEN PLASMAS</b> .....	45
<i>Zammit, M.C.; Fursa, D.V.; Savage, J.S.; Bray, I.</i>	
<b>ELECTRON SOURCE FROM A LASER PLASMA EXPANDING IN AN ELECTRIC FIELD</b> .....	49
<i>Raymond, X.; Versteegen, M.; Gobet, F.; Hannachi, F.; Tarisien, M.</i>	
<b>THE EXTERNAL KINK MODE AND THE ROLE OF Q<sub>95</sub> IN DIVERTED TOKAMAKS</b> .....	53
<i>Turnbull, A.D.; Hanson, J.; Turco, F.; Ferraro, N.; Lancot, M.; Lao, L.; Strait, E.; Piovesan, P.; Martin, P.</i>	
<b>NON-INDUCTIVE IMPROVED H-MODE OPERATION IN ASDEX UPGRADE</b> .....	57
<i>Bock, A.; Fable, E.; Fischer, R.; Reich, M.; Rittich, D.; Stober, J.; Bernert, M.; Burckhart, A.; Dunne, M.; Geiger, B.; Giannone, L.; Kappatou, A.; Maj, O.; McDermott, R.; Mlynek, A.; Poli, E.; Tardini, G.; Zohm, H.</i>	
<b>THE SPECTRAL WEB: A NEW THEORY OF THE STABILITY OF STATIONARY PLASMA FLOWS</b> .....	61
<i>Goedbloed, H.</i>	
<b>PRODUCTION AND DAMPING OF RUNAWAY ELECTRONS IN A TOKAMAK</b> .....	65
<i>Breizman, B.; Aleynikov, P.</i>	
<b>EXPERIMENTAL OBSERVATION OF TWO THRESHOLD FIELDS FOR RUNAWAY-ELECTRON GENERATION IN THE EAST TOKAMAK</b> .....	69
<i>Zeng, L.; Liang, Y.; Lin, S.; Liu, Y.; Liu, H.; Zhou, R.; Zhao, H.; Ti, A.; Jie, Y.; Zhang, S.; Gao, X.; Zhang, X.; Wan, B.</i>	
<b>INTEGRATED MODELLING OF FUELLING AND DENSITY CONTROL IN ITER</b> .....	73
<i>Garzotti, L.; Mitiello Asp, E.; da Silva Aresta Belo, P.; Corrigan, G.; Harting, D.; Koechl, F.; Loarte, A.; Parail, V.; Ambrosino, R.; Cavinato, M.; Mattei, M.; Romanelli, M.; Sartori, R.; Valovic, M.</i>	
<b>SCRAPE-OFF LAYER DENSITY SHOULDER FORMATION &amp; EVOLUTION IN JET</b> .....	77
<i>Wynn, A.P.; Lipschultz, B.; Matthews, G.; Tal, B.; Mitiello, F.; Walkden, N.; Guillemaut, C.; Harrison, J.; Huber, A.; Kruezi, U.; Brix, M.; Nielsen, A.; Wiesen, S.; Joffrin, E.; Frigione, D.</i>	
<b>INVESTIGATIONS OF THE IMPACT OF CROSS-FIELD DRIFTS ON DIVERTOR DETACHMENT IN DIII-D WITH UEDGE</b> .....	81
<i>Jaervinen, A.E.; Allen, S.L.; Groth, M.; McLean, A.G.; Roglien, T.D.; Samuell, C.M.; Briesemeister, A.; Fenstermacher, M.; Hill, D.N.; Leonard, A.W.; Porter, G.D.</i>	
<b>SIMULATION OF NEUTRALS IN A TURBULENT SCRAPE-OFF LAYER</b> .....	85
<i>Thrysoe, A.S.; Madsen, J.; Naulin, V.; Nielsen, A.H.; Rasmussen, J.J.</i>	

<b>EFFECT OF THE RELATIVE SHIFT BETWEEN THE ELECTRON DENSITY AND TEMPERATURE PEDESTAL POSITION ON THE PEDESTAL STABILITY IN JET-ILW</b> .....	89
<i>Stefanikova, E.; Frassinetti, L.; Saarelna, S.; Loarte, A.; Nunes, I.; Lomas, P.; Rimini, F.; Drewelow, P.; Garzotti, L.; Kruezi, U.; Lomanowski, B.; de la Luna, E.; Meneses, L.; Peterka, M.; Viola, B.</i>	
<b>NEOCLASSICAL TRANSPORT WITH NON-TRACE IMPURITIES IN DENSITY PEDESTALS</b> .....	93
<i>Buller, S.; Pusztai, I.; Landreman, M.</i>	
<b>INTER-ELM PEDESTAL EVOLUTION: HIGH FREQUENCY MAGNETIC FLUCTUATIONS CORRELATED WITH THE CLAMPING OF THE PRESSURE GRADIENT</b> .....	97
<i>Laggner, F.M.; Wolfrum, E.; Mink, F.; Cavedon, M.; Dunne, M.G.; Manz, P.; Birkenmeier, G.; Fischer, R.; Maraschek, M.; Viezzer, E.; Willensdorfer, M.; Aumayr, F.</i>	
<b>ENHANCEMENTS TO THE ELITE CODE AND APPLICATION TO QH-MODE IN DIII-D</b> .....	101
<i>Lunniss, A.E.; Wilson, H.R.; Snyder, P.B.; Osborne, T.H.; Groebner, R.J.; Burrell, K.H.; Chen, X.</i>	
<b>CHARACTERIZATION OF ELECTRON DENSITY BASED ON OPERATIONAL PARAMETERS IN JET H-MODE PLASMAS WITH C AND ILW</b> .....	105
<i>Urano, H.; Hobirk, J.; Maggi, C. F.; Joffrin, E.</i>	
<b>TRANSPORT THEORY WITH EFFECTS OF FINITE BANANA WIDTH IN TOKAMAKS WITH BROKEN SYMMETR</b> .....	109
<i>Shaing, K.; Sabbagh, S.A.</i>	
<b>DISRUPTION MITIGATION AT JET USING MASSIVE GAS INJECTION</b> .....	113
<i>Jachmich, S.; Drewelow, P.; Gerasimov, S.; Kruezi, U.; Lehnen, M.; Reux, C.; Riccardo, V.; Carvalho, I.; Pau, A.; Imstrek, M.; Joffrin, E.</i>	
<b>FLUX CONSERVATION AND INDUCTIVE EFFECTS IN THE DISRUPTION MODELLING</b> .....	117
<i>Pustovitov, V.D.</i>	
<b>DENSITY PROFILE RECONSTRUCTION METHODS FOR X-MODE REFLECTOMETRY</b> .....	121
<i>Bianchetti Morales, R.; Hacquin, S.; Heuroux, S.; Sabot, R.</i>	
<b>TOWARDS A BETTER UNDERSTANDING OF NEUTRAL BEAM CURRENT DRIVE AND STEADY STATE OPERATION</b> .....	125
<i>Rittich, D.; Hopf, C.; Geiger, B.; Bock, A.; Burckhart, A.; Mlynek, A.; Rapson, C.; Ryter, F.; Stober, J.; Reich, M.; Willensdorfer, M.</i>	
<b>ISOTOPE EFFECT ON CONFINEMENT UNRAVELED FOR L-MODE IN DIMENSIONLESS p-SCAN</b> .....	129
<i>Schneider, P.A.; Bustos, A.; Hennequin, P.; Bernert, M.; Cavedon, M.; Dunne, M.; Happel, T.; Görler, T.; Kurzan, B.; McDermott, R.M.; Morel, P.; Ryter, F.; Willensdorfer, M.</i>	
<b>MODELLING OF ICRF FAST ION GENERATION IN 2D AND 3D PLASMA CONFIGURATIONS</b> .....	133
<i>Faustin, J.; Graves, J.; Cooper, W.A.; Pfefferlé, D.; Geiger, J.</i>	
<b>PARTICLE ACCELERATION DURING EXPLOSIVE RECONNECTION DUE TO TILT INSTABILITIES</b> .....	137
<i>Ripperda, B.; Keppens, R.; Porth, O.</i>	
<b>MESH-FREE SIMULATIONS OF THE KELVIN-HELMHOLTZ INSTABILITY IN THE KINETIC REGIME</b> .....	141
<i>Steinbusch, B.; Gibbon, P.; Sydora, R.D.</i>	
<b>NON-LINEAR MHD SIMULATIONS OF PELLET TRIGGERED ELMS IN JET AND ASDEX UPGRADE TOKAMAKS</b> .....	145
<i>Futatani, S.; Pamela, S.; Huijsman, G. T. A.; Garzotti, L.; Frigione, D.; Loarte, A.; Hoelzl, M.; Lang, P. T.; Kocsis, G.; Orain, F.; Dunne, M.; Lessig, A.; Mantsinen, M.</i>	
<b>KINETIC MODELING AND NUMERICAL SIMULATION OF PLASMA-WALL INTERACTIONS IN MAGNETIC FUSION DEVICES</b> .....	149
<i>Coulette, D.; Manfredi, G.; Hirstoaga, S.</i>	
<b>FINITE BANANA WIDTH EFFECT ON NTM THRESHOLD PHYSICS</b> .....	153
<i>Imada, K.; Connor, J.W.; Wilson, H.R.</i>	
<b>CHARACTERIZATION OF THE RF PLASMA IN ISHTAR</b> .....	157
<i>Dlnca, R.; Kostic, A.; Noterdaeme, J.; Usoltseva, M.; Jacquot, J.; Ochoukov, R.; Crombe, K.; Nikiforov, A.; Moreno, J.; Nikiforov, A.; Louche, F.; Van Eester, D.; Heuroux, S.; Devaux, S.; Moritz, J.; Faudot, E.; Fischer, F.; Siegl, G.; Funfgelder, H.; Faugel, H.; Noterdaeme, J.-M.</i>	
<b>OPERATIONAL PARAMETERS FOR EC ASSISTED START-UP IN ITER</b> .....	161
<i>Ricci, D.; Farina, D.; Granucci, G.; Cavinato, M.; Figini, L.</i>	
<b>SIMULATION OF NEUTRAL PARTICLE FLUXES FROM FAST IONS IN THE JET TOKAMAK</b> .....	165
<i>Varje, J.; Järvinen, A.; Koskela, T.; Kurki-Suonio, T.; Santala, M.; Äkäslompolo, S.</i>	
<b>EVIDENCE OF SYNERGY BETWEEN NEOCLASSICAL AND TURBULENT IMPURITY TRANSPORTS</b> .....	169
<i>Sarazin, Y.; Esteve, D.; Donnel, P.; Breton, S.; Garbet, X.; Grandgirard, V.; Bourdelle, C.; Dif-Pradalier, G.; Ehrlacher, C.; Ghendrih, Ph.; Latu, G.; Passeron, C.</i>	
<b>TOMOGRAPHY AS A DIAGNOSTIC TOOL FOR PLASMA TURBULENCE</b> .....	173
<i>Fujisawa, A.; Nagashima, Y.; Yamasaki, K.; Inagaki, S.; Onchi, T.; Ohshima, S.; Shimizu, A.</i>	
<b>STUDY OF THE Z-SCALING OF THE 3S-3P LINE IN STRONGLY COUPLED PLASMAS THROUGH COMPUTER SIMULATIONS</b> .....	177
<i>Gonzalez-Herrero, D.; Gigosos, M. A.</i>	
<b>THE CAUSAL IMPACT OF MAGNETIC FLUCTUATIONS IN SLOW AND FAST L-H TRANSITIONS AT TJ-II</b> .....	181
<i>van Milligen, B.P.; Estrada, T.; Carreras, B.A.; Ascasibar, E.; Hidalgo, C.; Pastor, I.; Fontdecaba, J.M.</i>	
<b>INVESTIGATION OF Z<sub>EFF</sub> PROFILES FROM VISIBLE BREMSSTRAHLUNG IN TJ-II PLASMA SCENARIOS AND ITS CORRELATION WITH IMPURITY TRANSPORT BEHAVIOR DEDUCED BY LASER BLOW-OFF</b> .....	185
<i>Lopez-Miranda, B.; Baciero, A.; Zurro, B.; Ochando, M.A.; Medina, F.; Pastor, I.</i>	
<b>TRANSPORT ANALYSIS OF DIFFERENT CHARGE/MASS IMPURITIES INJECTED BY LASER BLOW-OFF IN ECRH HEATED PLASMAS OF TJ-II</b> .....	189
<i>Zurro, B.; Hollmann, E.; Baciero, A.; Ochando, M.A.; Dux, R.; McCarthy, K.J.; Medina, F.; Lopez-Miranda, B.; Pastor, I.; Lopez-Bruna, D.</i>	
<b>ELECTRON TEMPERATURE EVOLUTION IN THE PLASMA CORE OF THE TJ-II STELLARATOR DURING AND AFTER CRYOGENIC AND TESPEL PELLET INJECTION</b> .....	193
<i>McCarthy, K.J.; Tamura, N.; Velasco, J.; Panadero, N.; Garcia-Cortes, I.; Tribaldos, V.; Blanco, E.; Fontdecaba, J.; Hernández Sánchez, J.; Medina, F.; Pawelec, E.</i>	
<b>THE STUDY OF FAST ION LOSSES IN TJ-II IN THE 100'S MHZ RANGES WITH A LUMINESCENCE PROBE WITH UPGRADED COUNTING AND ENERGY DISCRIMINATION CAPABILITIES</b> .....	197
<i>Martínez, M.; Zurro, B.; Baciero, A.; Jimenez-Rey, D.; Tribaldos, V.</i>	
<b>EXPERIMENTAL STUDY OF THE RELATION BETWEEN NEOCLASSICAL AND TURBULENCE MECHANISMS IN STELLARATORS</b> .....	201
<i>Losada, U.; Carreras, B.; van Milligen, B.; Alonso, A.; Sánchez, E.; Liu, B.; Cheng, J.; Garcia, L.; Silva, C.; Hidalgo, C.</i>	
<b>OBSERVATION OF CRYOGENIC HYDROGEN PELLET ABLATION WITH A FAST-FRAME CAMERA SYSTEM IN THE TJ II STELLARATOR</b> .....	205
<i>Panadero, N.; McCarthy, K.; de la Cal Heusch, E.; Hernandez Sanchez, J.; Garcia, R.; Navarro, M.</i>	
<b>INFLUENCE OF TANGENTIAL DRIFTS ON NEOCLASSICAL TRANSPORT IN OPTIMIZED STELLARATORS</b> .....	209
<i>Calvo, I.; Parra, F.I.; Velasco, J.; Alonso, J.</i>	
<b>ACOUSTIC-LIKE MODES DRIVEN BY FAST ELECTRONS IN TJ-II ECR PLASMAS</b> .....	213
<i>Sun, B.; Ochando, M.A.; López-Bruna, D.</i>	
<b>EFFECT OF FAST ELECTRONS ON THE STABILITY OF RESISTIVE INTERCHANGE MODES</b> .....	217
<i>Garcia, L.; Ochando, M.A.; Carreras, B.A.; Carralero, D.; Hidalgo, C.; van Milligen, B.P.</i>	
<b>ELM FILAMENTS ON ASDEX UPGRADE: ECEI OBSERVATIONS AND MODELLING</b> .....	221
<i>Vanovac, B.; Classen, I.; Denk, S.S.; Wolfrum, E.; Hoelzl, M.; Lessig, A.; Orain, F.; Luhmann, N.</i>	
<b>UPGRADED EQUILIBRIUM RECONSTRUCTION BY COUPLING OF AN EXTENDED SET OF MEASUREMENTS WITH CURRENT DIFFUSION MODELLING AT ASDEX UPGRADE</b> .....	225
<i>Fischer, R.; Bock, A.; Burckhart, A.; Dunne, M.; Ford, O.; Fuchs, C.; Giannone, L.; Gude, A.; Igochine, V.; Lebschy, A.; Maraschek, M.; McCarthy, P.; Mlynek, A.; Snicker, A.; Stober, J.; Tardini, G.; Weiland, M.; Willensdorfer, M.</i>	
<b>NON-LINEAR MODELING OF THE EDGE LOCALIZED MODES AND THEIR CONTROL BY RESONANT MAGNETIC PERTURBATIONS IN ASDEX UPGRADE</b> .....	229
<i>Orain, F.; Lessig, A.; Hoelzl, M.; Viezzer, E.; Dunne, M.; Becoulet, M.; Cahyna, P.; Huijsmans, G.; Willensdorfer, M.; Sutrop, W.; Kirk, A.; Pamela, S.; Guenter, S.; Lackner, K.; Strumberger, E.; Taray, D.</i>	
<b>POLOIDAL ASYMMETRIES IN THE EDGE DENSITY PROFILES ON ASDEX-UPGRADE</b> .....	233
<i>Guimaraes, L.; Poizel, S.; Silva, C.; Reimold, F.; Bernert, M.; Carralero, D.; Conway, G.D.; Manso, M.E.; Nikolaeva, V.; Santos, J.; Silva, A.; Wolfrum, E.</i>	
<b>NTM SEEDING BY STRONG INTERNAL EVENTS AT DIFFERENT <math>\beta_N</math> IN ASDEX UPGRADE</b> .....	237
<i>Igochine, V.; Classen, I.; Günter, S.; Gude, A.; Lackner, K.; Maraschek, M.; McDermott, R.; Sertoli, M.; Vecinet, D.; Willensdorfer, M.; Yu, Q.; Zohm, H.</i>	
<b>IMPACT OF LITHIUM PELLETS ON THE PLASMA PERFORMANCE IN THE ALL-METAL-WALL TOKAMAK ASDEX UPGRADE</b> .....	241
<i>Lang, P.T.; Maingi, R.; Mansfield, D.; McDermott, R.; Neu, R.L.; Wolfrum, E.; Arredondo Parra, R.; Bernert, M.; Birkenmeier, G.; Diallo, A.; Dunne, M.; Fable, E.; Fischer, R.; Geiger, B.; Hakola, A.; Kocsis, G.; Laggner, F.; Oberkofler, M.; Ploeckl, B.; Steglin, B.</i>	
<b>CHARACTERIZATION OF INTER-ELM MAGNETIC OSCILLATIONS ON ASDEX UPGRADE</b> .....	245
<i>Mink, F.; Wolfrum, E.; Maraschek, M.; Zohm, H.; Horvath, L.; Viezzer, E.; Laggner, F. M.; Dunne, M.; Manz, P.; Stroth, U.</i>	
<b>COMPARATIVE ANALYSIS OF DENSITY PROFILE AND MAGNETIC SIGNALS DURING THE JET M-MODE AND ASDEX UPGRADE I-PHASE PHENOMENA</b> .....	249
<i>Réfy, D.; Solano, E.; Vianello, N.; Zolotnik, S.; Dunai, D.; Tál, B.; Brix, M.; Gomes, R.; Birkenmeier, G.; Wolfrum, E.; Laggner, F.; Delabie, E.</i>	
<b>MEASUREMENT OF TURBULENT ELECTRON TEMPERATURE FLUCTUATIONS ON THE ASDEX UPGRADE TOKAMAK USING CORRELATED ELECTRON CYCLOTRON EMISSION</b> .....	253
<i>Freethy, S.J.; Conway, G.D.; Classen, I.; Creely, A.J.; Happel, T.; Vanovac, B.; White, A.E.</i>	
<b>COMPARATIVE PREDICTION OF 2ND HARMONIC DEUTERIUM ACCELERATION BY ICRF IN ASDEX UPGRADE NBI HEATED DISCHARGES</b> .....	257
<i>Tardini, G.; Bilato, R.; Fischer, R.; Snicker, A.; Weiland, M.</i>	
<b>ENHANCING O-2 MODE ELECTRON CYCLOTRON HEATING CAPABILITIES AT ASDEX UPGRADE</b> .....	261
<i>Schubert, M.; Plaum, B.; Vorbrugg, S.; Herrmann, A.; Kasperek, W.; Monaco, F.; Petzold, B.; Poli, E.; Schütz, H.; Stober, J.; Wagner, D.</i>	
<b>ENTRAINMENT OF MHD MODES IN ASDEX UPGRADE USING ROTATING NON-AXISYMMETRIC PERTURBATION FIELDS</b> .....	265
<i>Paccagnella, R.; Maraschek, M.; Zanca, P.; Fietz, S.; Giannone, L.; Gude, A.; Igochine, V.; Lazaros, A.; Marrelli, L.; Piovesan, P.; Reich, M.; Sutrop, W.</i>	
<b>LOW-Z IMPURITY TRANSPORT STUDIES USING CXRS AT ASDEX UPGRADE</b> .....	269
<i>Bruhn, C.; McDermott, R.; Dux, R.; Lebschy, A.; Angioni, C.; Bobkov, V.; Cavedon, M.; Kappatou, A.; Ochoukov, R.; Puetterich, T.; Viezzer, E.</i>	
<b>MEASUREMENT OF THE EXB VELOCITY ACROSS THE LOC-SOC TRANSITION</b> .....	273
<i>Lebschy, A.; McDermott, R.M.; Angioni, C.; Geiger, B.; Cavedon, M.; Conway, G.D.; Dux, R.; Fable, E.; Happel, T.; Kappatou, A.; Medvedeva, A.; Pütterich, T.; Prisiazhniuk, D.; Ryter, F.; Stroth, U.; Viezzer, E.</i>	

<b>RELATIONSHIP BETWEEN DIVERTOR COLLISIONALITY AND FILAMENT ACTIVITY MEASURED WITH REFLECTOMETRY AT ASDEX UPGRADE</b> .....	277
<i>Vicente, J.D.; Carralero, D.; Aguiam, D.; Silva, A.; Silva, C.; Schneider, P.; Manso, M.E.; Guimarães, L.; Conway, G.</i>	
<b>DENSITY PROFILE AND TURBULENCE EVOLUTION DURING L-H TRANSITION STUDIED WITH THE ULTRA-FAST SWEEP REFLECTOMETER ON ASDEX UPGRADE</b> .....	281
<i>Medvedeva, A.; Birkenmeier, G.; Bottereau, C.; Cavedon, M.; Clairet, F.; Conway, G.D.; Hennequin, P.; Heuroux, S.; Molina, D.; Silva, A.; Stroth, U.</i>	
<b>SPATIOTEMPORAL VARIATIONS OF BLOB PROPERTIES IN ASDEX UPGRADE</b> .....	285
<i>Fuchert, G.; Birkenmeier, G.; Carralero, D.; Manz, P.; Wolfrum, E.; Stroth, U.</i>	
<b>THIRD HARMONIC ICRF HEATING OF DEUTERIUM BEAM IONS ON ASDEX UPGRADE</b> .....	289
<i>Mantsinen, M.; Bobkov, V.; Gallart, D.; Geiger, B.; Johnsson, T.; Meyer, H.; Nocente, M.; Ochoukov, R.; Odstrcil, T.; Perelli, E.; Rasmussen, J.; Schneider, P.; Sharapov, S.; Tardini, G.; Tardocchi, M.; Vallejos, P.</i>	
<b>CHARACTERIZATION OF THE TURBULENCE DURING LOC-SOC TRANSITION USING POLOIDAL CORRELATION REFLECTOMETRY AT ASDEX UPGRADE</b> .....	293
<i>Prisachniuk, D.; Krämer-Flecken, A.; Conway, G.; Lebschy, A.; Angioni, C.; Happel, T.; Stroth, U.; Manz, P.</i>	
<b>VALIDATION OF THE TGLF MODEL AGAINST OHMIC CONFINEMENT TRANSITION AND IMPURITY TRANSPORT EXPERIMENT IN ASDEX UPGRADE</b> .....	297
<i>Erofeev, I.; Fable, E.; Angioni, C.; Lang, P.; McDermott, R.</i>	
<b>NUMERICAL STUDY ON TRIGGERING OF NEOCLASSICAL TEARING MODES BY SAWTEETH</b> .....	301
<i>Yu, Q.; Günter, S.; Lackner, K.</i>	
<b>A PARALLEL 3D DISCONTINUOUS GALERKIN FRAMEWORK FOR NONLINEAR RESISTIVE MHD SIMULATIONS IN TOKAMAK AND STELLARATOR GEOMETRIES</b> .....	305
<i>Hindenlang, F.J.; Sonnendrucker, E.; Holz, M.</i>	
<b>THE FIELD LINE MAP APPROACH FOR SIMULATIONS OF EDGE/SOL IN DIVERTOR GEOMETRY</b> .....	309
<i>Stegmeier, A.; Coster, D.; Ross, A.; Maj, O.; Lackner, K.</i>	
<b>EFFECT OF ISLANDS AND ROTATION ON NEOCLASSICAL TUNGSTEN IMPURITY TRANSPORT</b> .....	313
<i>Bergmann, A.</i>	
<b>INFLUENCE OF THE FIRST WALL MATERIAL ON PARTICLE FUELLING</b> .....	317
<i>Wolfrum, E.; Lunt, T.; Reimold, F.</i>	
<b>CONCEPTUAL DESIGN STUDIES OF IONIZATION GAUGES FOR THE MEASUREMENT OF NEUTRAL GAS DENSITY AT HIGH PRESSURES AND HIGH MAGNETIC FIELDS</b> .....	321
<i>Mackel, F.; Haas, G.; Scarabosio, A.</i>	
<b>PROGRESS ON THE ICRF ORBIT-AVERAGED QUASILINEAR OPERATOR OF TORIC FULL-WAVE CODE</b> .....	325
<i>Bilato, R.; Belmonto, V.; Brambilla, M.; Maj, O.; Poli, E.</i>	
<b>A NEW MECHANISM CAUSING STRONG DECAY OF GEODESIC ACOUSTIC MODES: COMBINED ACTION OF PHASE-MIXING AND LANDAU DAMPING</b> .....	329
<i>Palermo, F.; Biancalani, A.; Angioni, C.; Zonca, F.; Bottino, A.; Conway, G.; Poli, E.</i>	
<b>DEVELOPMENT OF A SYNTHETIC LITHIUM BEAM DIAGNOSTIC FOR THE HESEL TURBULENCE CODE AND APPLICATION TO BLOB TRANSPORT</b> .....	333
<i>Schießl, B.; Birkenmeier, G.; Nielsen, A.H.; Loiten, M.; Thrysoe, A.; Naulin, V.; Stroth, U.</i>	
<b>PREPARATION OF EXPLOITATION OF MEDIUM-SIZE TOKAMAKS UNDER EUROPEAN ROADMAP FOR THE REALIZATION OF FUSION ENERGY</b> .....	337
<i>Turnyanskiy, M.; Beurskens, M.; Burckart, A.; Coda, S.; Ceconello, M.; Crombe, K.; Komm, M.; Donne, T.; Eich, T.; Esposito, B.; Felici, F.; Garcia-Munoz, M.; Hakola, A.; Litaudon, X.; Martin, P.; Mayoral, M.-L.; McDonald, D. C.; Mlynar, J.; Meyer, H.; Neu, R.; Piovisan, P.; Reimerdes, H.; Romanelli, F.; Scannell, R.; Tudisco, O.</i>	
<b>INTEGRATED EQUILIBRIUM RECONSTRUCTION AND MHD STABILITY ANALYSIS OF TOKAMAK PLASMAS IN THE EU-IM PLATFORM</b> .....	341
<i>Coelho, R.; Faucher, B.; Zwingmann, W.; McCarthy, P.; Giovannozzi, E.; Suchkov, E.; Zaitsev, F.; Hawkes, N.; Dunne, M.; Lupelli, I.; Szepesi, G.</i>	
<b>HAMILTONIAN APPROACH FOR EVALUATION OF TOROIDAL TORQUE FROM FINITE AMPLITUDE NON-AXISYMMETRIC PERTURBATIONS OF A TOKAMAK MAGNETIC FIELD IN RESONANT TRANSPORT REGIMES</b> .....	345
<i>Albert, C.G.; Heyn, M.F.; Kapper, G.; Kasilov, S.V.; Kernbichler, W.; Martisch, A.F.</i>	
<b>O- AND X-MODE RADIAL CORRELATION DOPPLER REFLECTOMETRY IN 2D FULL WAVE SIMULATIONS AND EXPERIMENTS</b> .....	349
<i>Pinzon, J.; Happel, T.; Hennequin, P.; Blanco, E.; Estrada, T.; Stroth, U.</i>	
<b>ANALYSIS OF IMPURITY MOMENTUM BALANCE AND FLOWS IN THE SOL BY SOLPS-ITER MODELLING</b> .....	353
<i>Sytova, E.; Senichenkov, I.; Kaveeva, E.; Rozhansky, V.; Veselova, I.; Voskoboinikov, S.; Coster, D.</i>	
<b>INVESTIGATION OF THE FAST PARTICLE VELOCITY SPACE BY DIAGNOSING POLOIDAL ASYMMETRIES OF HEAVY IONS AT ASDEX UPGRADE</b> .....	357
<i>Odstrcil, T.; Pütterich, T.; Bilato, R.; Weiland, M.; Gude, A.; Mazon, D.</i>	
<b>3D ORBIT SIMULATIONS OF THE FAST-ION TRANSPORT INDUCED BY EXTERNALLY APPLIED MAGNETIC PERTURBATIONS WITH DIFFERENT POLOIDAL SPECTRA</b> .....	361
<i>Sanchez, L.; Garcia-Munoz, M.; Snicker, A.; Galdon, J.; Rodriguez-Ramos, M.; Nocente, M.; Viezzer, E.; Ayllon-Guerola, J.; Garcia-Lopez, J.; Rivero, J.; Gonzalez, J.; Dominguez, A.</i>	
<b>PARAMETRISATION OF OPTIMAL RMP COIL PHASE ON ASDEX UPGRADE</b> .....	365
<i>Ryan, D.A.; Liu, Y.; Kirk, A.; Dunne, M.; Li, L.; Dudson, B.; Piovesan, P.; Sutrop, W.; Willensdorfer, M.</i>	
<b>NUMERICAL STUDY OF TEARING MODE SEEDING BY EXTERNALLY PROVIDED PERTURBATION OF RESONANT SURFACE</b> .....	369
<i>Meshcheriakov, D.; Igochine, V.; Fietz, S.; Hoelzl, M.; Orain, F.; Guenter, S.; Lackner, K.</i>	
<b>REAL-TIME DIAMAGNETIC FLUX MEASUREMENTS ON ASDEX UPGRADE</b> .....	373
<i>Giannone, L.; Geiger, B.; Bilato, R.; Maraschek, M.; Odstrcil, T.; Fischer, R.; Fuchs, C.; McCarthy, P.; Mertens, V.; Schuhbeck, K.</i>	
<b>THERMAL ENERGY CONFINEMENT STUDY IN THE GLOBUS-M SPHERICAL TOKAMAK</b> .....	377
<i>Kurskiev, G.; Shchegolev, P.; Bakharev, N.; Ibyaminova, A.; Avdeeva, G.; Gusev, V.; Kiselev, E.; Minaev, V.; Mukhin, E.; Patrov, M.; Petrov, Y.; Sakharov, N.; Telnova, A.; Tolstyakov, S.</i>	
<b>MULTICHANNEL SPD SYSTEM FOR RADIATED POWER STUDY ON THE GLOBUS-M TOKAMAK</b> .....	381
<i>Iblaminova, A.; Alekseyev, A.; Aruev, P.; Bakharev, N.; Bazhenov, A.; Gusev, V.; Kurskiev, G.; Bazhenov, A.; Petrov, Y.; Sakharov, N.; Shchegolev, P.; Tolstyakov, S.; Zabrodsky, V.</i>	
<b>STUDY OF ION HEAT TRANSPORT IN NBI EXPERIMENTS ON THE GLOBUS-M SPHERICAL TOKAMAK</b> .....	385
<i>Avdeeva, G.; Kurskiev, G. S.; Miroshnikov, I. V.; Sakharov, N. V.; Bakharev, N. N.; Gusev, V. K.; Ibyaminova, A. D.; Minaev, V. B.; Patrov, M. I.; Petrov, Y. V.; Tretiakov, P. M.; Shchegolev, P. B.; Tolstyakov, S. Y.</i>	
<b>NBI FOR HEATING AND CURRENT DRIVE IN SPHERICAL TOKAMAK GLOBUS-M, -M2</b> .....	389
<i>Shchegolev, P.B.; Minaev, V. B.; Telnova, A. Y.; Bakharev, N. N.; Gusev, V. K.; Kurskiev, G. S.; Miroshnikov, Patrov, M. I.; Petrov, Y. V.; Sakharov, N. V.; Tolstyakov, S. Y.</i>	
<b>A VLASOV CODE SIMULATION OF THE AMPLIFICATION OF SEED PULSES BY BRILLOUIN BACKSCATTERING IN MAGNETIZED PLASMAS</b> .....	393
<i>Shoucri, M.</i>	
<b>A VLASOV CODE SIMULATION OF THE FORMATION AND EVOLUTION OF A DOUBLE LAYER DURING THE ION ACCELERATION DRIVEN BY A HIGH-INTENSITY LASER BEAM</b> .....	397
<i>Vidal, F.; Shoucri, M.; Matte, J.</i>	
<b>ELECTRON ACCELERATION IN PERPENDICULARLY CROSSED LASER BEAMS WITH FOLLOWING INJECTION IN THE LASER WAKEFIELD ACCELERATOR</b> .....	401
<i>Horný, V.; Petržílka, V.; Klimo, O.; Krus, M.</i>	
<b>GENERATION OF LASER-DRIVEN FEMTOSECOND ELECTRON BEAMS FOR SECONDARY PHOTON SOURCES WITH 7 TW TI-SAPPHIRE LASER SYSTEM AT PALS</b> .....	405
<i>Bohacek, K.; Kozlova, M.; Nejd, J.; Chaulagain, U.; Horny, V.; Krus, M.; Albrecht, M.</i>	
<b>LWFA LOW-ENERGY ELECTRON BEAMS</b> .....	409
<i>Smid, M.; Bohacek, K.; Chaulagain, U.; Gu, Y.; Krus, M.; Kozlova, M.; Falk, K.</i>	
<b>MAGNETIC FIELD INDUCED BY LASER-DRIVEN TARGET CURRENT</b> .....	413
<i>Krasa, J.; Cihardt, J.; De Marco, M.; Klir, D.; Velyhan, A.; Rezac, K.; Pfeijfer, M.; Krousny, E.; Skala, J.; Dudzak, R.; Dostal, J.; Kaufman, J.; Ullschmied, J.; Limpouch, J.</i>	
<b>GRAVITATIONAL WAVES GENERATED BY LASER-PLASMA INTERACTION</b> .....	417
<i>Kadlecova, H.; Klimo, O.; Weber, S.; Korn, G.</i>	
<b>PARTICLE DYNAMICS AND RADIATION IN AN ULTRA-INTENSE STANDING WAVE</b> .....	421
<i>Jirka, M.; Klimo, O.; Weber, S.; Bulanov, S.V.; Esirkepov, T.Z.; Gelfer, E.G.; Bulanov, S.S.; Korn, G.</i>	
<b>PHASE DEPENDENT ADVECTION-DIFFUSION IN DRIFT WAVE-ZONAL FLOW TURBULENCE</b> .....	425
<i>Moradi, S.; Anderson, J.</i>	
<b>SOLAR PROMINENCE MODELING: 3D MODELING PROGRESS</b> .....	429
<i>Keppens, R.; Xia, C.; Fang, X.; Moschou, S.P.</i>	
<b>MHD AND KINETIC ASPECTS IN SOLAR WIND MODELING</b> .....	433
<i>Moschou, S.P.; Pierrard, V.; Keppens, R.; Pomoell, J.</i>	
<b>SIMULATING KINK INSTABILITIES OF SOLAR MAGNETIC FLUXROPEs</b> .....	437
<i>Mei, Z.; Keppens, R.</i>	
<b>HALL-MHD SIMULATIONS OF THE KELVIN-HELMHOLTZ INSTABILITY AT THE MAGNETOPAUSE: RECONNECTION AND TRANSPORT OF THE NORTHWARD SOLAR-WIND</b> .....	441
<i>Leroy, M.H.; Keppens, R.</i>	
<b>ELECTRONS DYNAMICS IN ASYMMETRIC MAGNETIC RECONNECTION AND RAPID ISLAND COALESCENCE: ANISOTROPY AND AGYROTROPY WITH AND WITHOUT A GUIDE FIELD</b> .....	445
<i>Cazzola, E.; Innocenti, M.; Goldman, M.V.; Newman, D.L.; Markidis, S.; Lapenta, G.</i>	
<b>AN INNOVATIVE, PARTICLE-SUPPORTED LAGRANGIAN METHOD FOR MHD PLASMA SIMULATIONS</b> .....	449
<i>Bacchini, F.; Olshevsky, V.; Lapenta, G.</i>	
<b>COUPLING OF THE MPI-AMRVAC MHD CODE WITH THE IPIC3D KINETIC CODE</b> .....	453
<i>Makwana, K.; Keppens, R.; Lapenta, G.</i>	
<b>SUPRATHERMAL KAPPA POPULATIONS IN THE SOLAR WIND: FROM OBSERVATIONAL EVIDENCES TO REALISTIC MODELLING</b> .....	457
<i>Lazar, M.; Poedts, S.; Fichtner, H.; Pierrard, V.; Yoon, P.</i>	
<b>KINETIC INSTABILITIES OF THE SUPRATHERMAL POPULATIONS IN THE SOLAR WIND</b> .....	461
<i>Shaaban, S.; Lazar, M.; Poedts, S.; Elhanbaly, A.</i>	
<b>ANISOTROPIC EVOLUTION OF HIGHLY-OBLIQUE ALFVEN WAVES IN THE PRESENCE OF HOT DRIFTING IONS</b> .....	465
<i>Maneva, Y.; Poedts, S.</i>	
<b>2.5D MHD SIMULATION OF FLUX ROPE FORMATION AND ERUPTION DRIVEN BY CONVERGING MOTION</b> .....	469
<i>Zhao, X.; Xia, C.; Keppens, R.; Gan, W.</i>	

<b>LOW-BETA MAGNETIC RECONNECTION UNDER LABORATORY PLASMA CONDITIONS</b> .....	473
<i>Curreli, D.; Cazzola, E.; Lapenta, G.</i>	
<b>MICROWAVE DISCHARGE WITH MULTIPLY CHARGED IONS IN EXPANDING GAS JET AS A POINT SOURCE OF UV RADIATION</b> .....	477
<i>Shalashov, A.; Golubev, S.; Gospodchikov, E.; Abramov, I.</i>	
<b>ABSORPTION PROPERTIES OF ARGON ARC PLASMA</b> .....	481
<i>Bogatyeva, N.; Bartlova, M.; Aubrecht, V.</i>	
<b>EXPERIMENTAL INVESTIGATION ON THE AIR PLASMA IGNITION IN KEROSENE-AIR MIXTURE</b> .....	485
<i>Yu, J.; He, L.; Xiao, Y.; Jiang, Y.; Zhao, B.</i>	
<b>LASER SPECTROSCOPY FOR INVESTIGATION OF ARGON PLASMA ON PS-1 DEVICE</b> .....	489
<i>Kutuzov, D.S.; Moskalenko, I.V.; Molodtsov, N.A.; Shcheglov, D.A.; Zhil'tsov, V.A.; Bragin, E.Y.; Yanchenkov, S.V.</i>	
<b>ANALYSIS OF THE ENERGY LOSSES AND WAITING TIMES FOR INDIVIDUAL ELMS IN THE JOINT EUROPEAN TORUS</b> .....	493
<i>Shabbir, A.; Verdoolaege, G.; Hornung, G.; Kardaun, O. J. W. F.; Zohm, H.</i>	
<b>DEPOSITION AND FUEL INVENTORY IN THE CASTELLATED STRUCTURE OF BERYLLIUM LIMITERS AFTER CAMPAIGNS IN JET WITH THE ITER-LIKE WALL</b> .....	497
<i>Rubel, M.J.; Petersson, P.; Coad, J.P.; Lungu, C.; Jepu, I.; Porosnicu, C.; Brezinsek, S.; Matveev, D.; Kirschner, A.; Widdowson, A.</i>	
<b>SIMULATIONS OF COMBINED ICRF AND NBI HEATING FOR HIGH FUSION PERFORMANCE IN JET</b> .....	501
<i>Gallart, D.; Mantsinen, M.; Garzotti, L.; Bilato, R.; Challis, C.; Garcia, J.; Gutierrez, A.; Johnson, T.; Lerche, E.; Sáez, X.; Van Ester, D.</i>	
<b>LIGHT IMPURITIES IN JET PLASMAS: TRANSPORT MECHANISMS AND EFFECTS ON THERMAL TRANSPORT</b> .....	505
<i>Bonanomi, N.; Mantica, P.; Giroud, C.; Angioni, C.; Citrin, J.; Lerche, E.; Manas, P.; Sozzi, C.; Taylor, D.; Tsalas, M.; Van Ester, D.</i>	
<b>CHARACTERISING W RADIATION IN JET-ILW PLASMAS</b> .....	509
<i>Solano, E.R.; Coffey, I.; Huber, A.; Henderson, S.S.; O'Mullane, M.; Casson, F.; Summers, H.; Pütterich, T.; Puiatti, M.; Carraro, L.; Valisa, M.; Menmuir, S.; Lawson, K.; Sertoli, M.; Lomanowski, B.; Reinke, M.; Bernert, M.; Drevelow, P.; Maslov, M.; Flanagan, J.; Sergienko, G.; Stamp, M.; Brezinsek, S.; Schmuck, S.; Boom, J.; Giroud, C.; Guillemaut, C.; de la Luna, E.; Baciero, A.</i>	
<b>SIMULATING RUNAWAY ELECTRONS DURING DISRUPTIONS WITH TEST PARTICLES IN THE JOREK CODE</b> .....	513
<i>Sommariva, C.; Nardon, E.; Fil, A.; Beyer, P.; Huysmans, G. T. A.; Hoelzl, M.; Van Vugt, D.; Sarkimaki, K.</i>	
<b>MICRO-INSTABILITY ANALYSIS OF JET H-MODE PLASMA DURING PELLETT FUELING</b> .....	517
<i>Klaywittaphat, P.; Onjun, T.</i>	
<b>MODELLING THE FAST-ION RF-PINCH EFFECT WITH A TOROIDALLY LOCALISED ICRF ANTENNA</b> .....	521
<i>Patten, H.; Graves, J.; Faustini, J.; Lanthaler, S.; Eester, D.V.; Lerche, E.; Johnson, T.</i>	
<b>GYROKINETIC SIMULATIONS OF TRANSPORT IN PELLETT FUELLED DISCHARGES AT JET</b> .....	525
<i>Tegnered, D.; Nordman, H.; Oberparleiter, M.; Strand, P.; Garzotti, L.; Lupelli, I.; Roach, C.; Romanelli, M.; Valovic, M.</i>	
<b>FLUX-DRIVEN MULTI-CHANNEL SIMULATIONS WITH THE QUASILINEAR GYROKINETIC TRANSPORT MODEL QUALIKIZ</b> .....	529
<i>Citrin, J.; Bourdelle, C.; Casson, F. J.; Angioni, C.; Breton, S.; Felici, F.; Garbet, X.; Gurcan, O.; Garzotti, L.; Koehl, F.; Imbeaux, F.; Redondo, J.; Strand, P.; Szepest, G.</i>	
<b>JET DISRUPTION SIMULATIONS</b> .....	533
<i>Strauss, H.; Paccagnella, R.; Breslau, J.; Joffrin, E.; Riccardo, V.; Lupelli, I.; Baruzzo, M.</i>	
<b>ON THE POSSIBILITY TO USE A FAST 2D INTERPRETATIVE MODEL FOR ANALYSIS OF FUSION PLASMA TURBULENCE FROM REFLECTOMETRY DATA</b> .....	537
<i>Zadvitskiy, G.; Clairet, F.; Hacquin, S.; Sabot, R.; Heuroux, S.; Lechte, C.</i>	
<b>FIRST APPLICATION OF THE MASSIVELY-PARALLEL MONTE CARLO CODE ERO2.0 FOR PLASMA-WALL INTERACTION AND 3D LOCAL IMPURITY TRANSPORT AT JET ILW</b> .....	541
<i>Romazanov, J.; Borodin, D.; Kirschner, A.; Firdaouss, M.; Lasa, A.E.; Brömmel, D.; Steinbusch, B.; Gibbon, P.; Brezinsek, S.; Linsmeier, C.</i>	
<b>EVOLUTION OF THE BOOTSTRAP CURRENT PROFILE DURING THE TYPE I ELM CYCLE OF JET-ILW H-MODE PLASMAS</b> .....	545
<i>Horvath, L.; Maggi, C.F.; Casson, F.J.; Frassinetti, L.; Dunne, M.G.; Hobirk, J.; Lupelli, I.; Gibson, K.J.</i>	
<b>GLOBAL CONTROL SYSTEM AND PLASMA DYNAMICS DISTINGUISH NATURALLY OCCURRING AND PELLETT-PRECIPITATED EDGE LOCALIZED MODES IN THE JET TOKAMAK</b> .....	549
<i>Chapman, S.C.; Dendy, R. O.; Lang, P. T.; Watkins, N. W.; Romanelli, M.; Todd, T. N.</i>	
<b>EFFECT OF EDGE LOCALIZED MODES AND RESONANT MAGNETIC PERTURBATION ON FUSION REACTIONS IN MAST</b> .....	553
<i>Klimek, I.; Ceconello, M.</i>	
<b>ENHANCEMENTS TO MAST UPGRADE TO ADDRESS THE EUROFUSION PLASMA EXHAUST STRATEGY</b> .....	557
<i>Harrison, J.R.; Moulton, D.; Carr, M.; Chapman, I. T.; Keeling, D.; Kirk, A.; Walkden, N. R.</i>	
<b>DREICER MECHANISM OF RUNAWAY ELECTRON GENERATION IN PRESENCE OF HIGH-Z IMPURITIES</b> .....	561
<i>Ismailov, R.; Aleynikov, P.; Kononov, S.</i>	
<b>OPTIMIZING OF THE BANANA-DRIFT CURRENT GENERATION IN THE TOKAMAK ITER</b> .....	565
<i>Gott, Y.V.; Yurchenko, E.I.</i>	

<b>EFFECT OF IMPURITY PUFFING ON GEODESIC ACOUSTIC MODE IN OH AND ECRH REGIMES ON T-10</b> .....	569
<i>Zenin, V.; Klyuchnikov, L.; Melnikov, A.; Nemets, A.; Nurgaliev, M.; Subbotin, G.</i>	
<b>DEVELOPMENT OF LINEAR MODELS FOR T-15 PLASMA CONTROL SYSTEM</b> .....	573
<i>Dubrov, M.; Khayrutdinov, R.; Lukash, V.; Sokolov, M.; Dokuka, V.</i>	
<b>RESONANCE LINE RADIATION FLUX IN A PLASMA SLAB: SELF-SIMILAR RADIATIVE TRANSFER MODEL</b> .....	577
<i>Sdvizhenskii, P.A.; Krasheninnikov, S.I.; Kukushkin, A.B.</i>	
<b>INVERSE PROBLEM FOR FAST NONLOCAL HEAT TRANSPORT EVENTS IN MAGNETIC FUSION PLASMAS</b> .....	581
<i>Kukushkin, A.B.; Kulichenko, A.A.; Sdvizhenskii, P.A.; Sokolov, A.V.; Voloshinov, V.V.</i>	
<b>EXPERIMENTAL STUDY OF SPATIAL DISTRIBUTIONS OF DENSITY FLUCTUATIONS IN T-10 TOKAMAK AND COMPARISON BETWEEN EXPERIMENTAL RESULTS AND NUMERICAL MODELING</b> .....	585
<i>Buldakov, M.; Vershkov, V.; Shelukhin, D.; Isaev, M.</i>	
<b>DEPENDENCE OF THE AMPLITUDE OF GAM-INDUCED CORE POTENTIAL OSCILLATIONS ON DENSITY IN THE T-10 TOKAMAK</b> .....	589
<i>Eliseev, L.; Lakhin, V.; Lysenko, S.; Melnikov, A.; Zenin, V.</i>	
<b>TEARING MODES AND TRANSPORT BARRIERS</b> .....	593
<i>Timchenko, N.; Ksenia, R.; Eliseev, L.</i>	
<b>LOW-THRESHOLD PARAMETRIC EXCITATION OF ELECTRON BERNSTEIN WAVE TRAPPED IN A FILAMENT IN O-MODE ECRH EXPERIMENT IN ITER</b> .....	597
<i>Sysoeva, K.; Popov, A.; Saveliev, A.; Sysoeva, E.</i>	
<b>100-HZ THOMSON SCATTERING DIAGNOSTICS ON T-10 TOKAMAK</b> .....	601
<i>Asadulin, G.; Bel'bas, I.; Gorshkov, A.</i>	
<b>PROPERTIES OF THE MHD FORCE OPERATOR IN THE PRESENCE OF A RESISTIVE WALL</b> .....	605
<i>Galyuzov, A.A.; Pustovitov, V.D.</i>	
<b>OPTIMIZATION OF ELECTROMAGNETIC DIAGNOSTIC SYSTEM OF THE T-15 TOKAMAK</b> .....	609
<i>Zotov, I.V.; Melnikov, A.V.; Sychugov, D.Y.; Lukash, V.E.; Khayrutdinov, R.R.</i>	
<b>DYNAMICS OF SPHERICAL TOKAMAKS WITH A PLASMA CENTER COLUMN</b> .....	613
<i>Garcia-Martinez, P.L.; Lampugnani, L.G.; Farengo, R.</i>	
<b>GEODESIC MODE INSTABILITY DRIVEN BY ELECTRON AND ION FLUXES IN TOKAMAKS</b> .....	617
<i>Elfimov, A.G.; Camilo de Souza, F.; Galvao, R.M.; Krbec, J.; Seidl, J.; Stockel, J.; Hron, M.; Havlicek, J.; Mitosinkova, K.</i>	
<b>MODELLING ION CYCLOTRON EMISSION FROM BEAM-INJECTED IONS IN MAGNETIC CONFINEMENT FUSION PLASMAS</b> .....	621
<i>Reman, B.; Dendy, R.; Akiyama, T.; Chapman, S.; Cook, J.; Igami, H.; Inagaki, S.; Saito, K.; Yun, G.</i>	
<b>THE ROLE OF PLASMA INSTABILITIES IN THE ONSET OF DETACHMENT IN THE YORK LINEAR PLASMA DEVICE</b> .....	625
<i>Willett, H.V.; Gibson, K.J.; Browning, P.K.</i>	
<b>THE SELF-CONSISTENT RESPONSE OF LINEAR MICROINSTABILITIES TO PROFILE EVOLUTION</b> .....	629
<i>Bokshi, A.; Connor, J.W.; Dickinson, D.; Roach, C.M.; Wilson, H.R.</i>	
<b>A LINK BETWEEN CAD MODELS AND PHYSICS CODES</b> .....	633
<i>Telenta, M.; Kos, L.; Akers, R.; Lupelli, I.</i>	
<b>INTERACTION BETWEEN TURBULENCE AND NEOCLASSICAL EFFECTS IN GLOBAL GYROKINETIC SIMULATIONS WITH GENE</b> .....	637
<i>Oberparleiter, M.; Doerk, H.; Görler, T.; Jenko, F.; Nordman, H.; Told, D.</i>	
<b>PERTURBED VACUUM MAGNETIC FIELD AND GLOBAL M = 2 COMPONENTS ASSOCIATED WITH GEODESIC ACOUSTIC MODES IN TOKAMAKS</b> .....	641
<i>Wahlberg, C.; Graves, J.</i>	
<b>REDUCED ORDER MODELLING OF RESISTIVE WALL MODES IN EXTRAP T2R REVERSED-FIELD PINCH</b> .....	645
<i>Setiadi, A.; Villone, F.; Brunzell, P.; Polsinelli, A.; Mastrostefano, S.; Frassinetti, L.</i>	

## PART 2

<b>MICROTURBULENCE-INDUCED MODIFICATIONS TO THE ALPHA PARTICLE DISTRIBUTION AND ASSOCIATED EFFECTS</b> .....	649
<i>Wilkie, G.J.; Abel, I. G.; Landreman, M.; Dorland, W.</i>	
<b>ESTIMATION OF ANOMALOUS VISCOSITY BASED ON MODELING OF EXPERIMENTALLY OBSERVED PLASMA ROTATION BRAKING INDUCED BY APPLIED RESONANT MAGNETIC PERTURBATIONS</b> .....	653
<i>Fridström, R.; Munaretto, S.; Frassinetti, L.; Chapman, B.; Brunzell, P.; Sarff, J.</i>	
<b>INVESTIGATION OF DISCHARGE INITIATION BY ICRF ANTENNA ON URAGAN 3-M</b> .....	657
<i>Tripskiy, M.; Lysoivan, A.; Wauters, T.; Moiseenko, V.; Lozin, A.; Pavlichenko, R.; Kozulya, M.; Dreval, M.; Mironov, Y.K.; Shapoval, A.N.; Chechkin, V.V.; Grigor'eva, L.I.; Beletskii, A.; Kasilov, A.A.; Noterdaeme, J.; Van Schoor, M.</i>	
<b>ASSESSMENT OF FLUID NEUTRAL MODELS FOR HIGH RECYCLING DIVERTOR CONDITIONS</b> .....	661
<i>Horsten, N.; Samaey, G.; Baelmans, M.</i>	
<b>KINETIC ANALYSIS OF THE INTERACTION BETWEEN PARTICLES AND MAGNETIC ISLANDS</b> .....	665
<i>Nasr, S.; Zarzoso, D.; Smolyakov, A.</i>	

<b>RESEARCH ON INTERACTION OF PULSED PLASMA-ION STREAMS OF DIFFERENT ENERGY FLUXES WITH SIC AND CFC SAMPLES</b> .....	669
<i>Kwiatkowski, R.; Nowakowska-Langier, K.; Skladnik-Sadowska, E.; Sadowski, M.J.; Zaloga, D.R.; Ladygina, M.</i>	
<b>RF POTENTIAL OSCILLATIONS IN A MAGNETIZED CAPACITIVE DISCHARGE</b> .....	673
<i>Faudot, E.; Devaux, S.; Moritz, J.; Heuriaux, S.; Usoltseva, M.; Nikiforov, A.; Crombe, K.; D'Inca, R.; Jacquot, J.</i>	
<b>GYROKINETIC SIMULATION OF INTERPLAY BETWEEN GAM AND TRANSPORT IN TUMAN-3M TOKAMAK</b> .....	677
<i>Kiviniemi, T.; Askinazi, L.G.; Belokurov, A.A.; Gurchenko, A.D.; Gusakov, E.Z.; Korpilo, T.; Machielsen, M.; Leerink, S.; Niskala, P.; Rochford, R.</i>	
<b>MODELING OF SEED MAGNETIC ISLAND FORMATION</b> .....	681
<i>Miron, I.</i>	
<b>GLOBAL GYROKINETIC SIMULATIONS OF TRAPPED-ELECTRON MODE AND TRAPPED-ION MODE MICROTURBULENCE</b> .....	685
<i>Gravier, E.; Reveille, T.; Drouot, T.; Lesur, M.</i>	
<b>ON GROWTH RATES AND SCALINGS FOR SLOW AND FAST RESISTIVE WALL MODES</b> .....	689
<i>Medvedev, S.; Pustovitov, V.</i>	
<b>MODELLING OF TOKAMAK PLASMA WITH SOL: MHD STABILITY WITH FINITE CURRENT DENSITY AT THE SEPARATRIX</b> .....	693
<i>Martynov, A.; Medvedev, S.; Ivanov, A.; Poshekhonov, Y.</i>	
<b>DEPENDENCE OF THE ENERGY CONFINEMENT ON PLASMA EDGE RADIATION COOLING IN T-10</b> .....	697
<i>Kasyanova, N.; Razumova, K.; Gorbunov, E.; Dremim, M.; Kislov, A.; Kluchnikov, L.; Krupin, V.; Krylov, S.; Lysenko, S.; Myalton, T.; Nemets, A.; Noikin, G.; Nurgaliev, M.; Sarychev, D.; Sushkov, A.; Chistyakov, V.</i>	
<b>ADVANCES IN DEVELOPMENT OF GOL-NB PROGRAM</b> .....	701
<i>Postupaev, V.V.; Batkin, V.I.; Beklemishev, A.D.; Burdakov, A.V.; Burmasov, V.S.; Chernoshanov, I.S.; Gorbovsky, A.I.; Ivanov, I.A.; Kuklin, K.N.; Mekler, K.I.; Rovenskikh, A.F.; Sidorov, E.N.; Yurov, D.V.</i>	
<b>STUDY OF THE COUPLING OF DISTRIBUTED ICRH ANTENNA AND OF ITS OPTIMISATION FOR HEATING OF LARGE MACHINES AS DEMO</b> .....	705
<i>Messiaen, A.; Ragona, R.</i>	
<b>DEVELOPMENT OF THE HIGH KINETIC ENERGY PLASMA JET FOR CENTRAL FUELLING</b> .....	709
<i>Bakharev, N.; Bormatov, A.; Gusev, V.; Goryaionov, V.; Ibyaminova, A.; Novokhatsky, A.; Poniaev, S.; Sakharov, N.; Voronin, A.</i>	
<b>NON-LINEAR RADIO FREQUENCY WAVE-SHEATH INTERACTION IN MAGNETIZED PLASMA EDGE: THE ROLE OF THE FAST WAVE</b> .....	713
<i>Lu, L.; Colas, L.; Jacquot, J.; Despres, B.; Heuriaux, S.; Faudot, E.; Van Eester, D.; Crombe, K.; Krivska, A.; Noterdaeme, J.-M.</i>	
<b>EFFECTS OF OH ACCUMULATION AND ECRH REMOVAL OF IMPURITIES ON THE T-10 TOKAMAK</b> .....	717
<i>Nurgaliev, M.; Krupin, V.; Klyuchnikov, L.; Nemets, A.; Dnestrovskij, A.; Zemtsov, I.; Sarychev, D.; Borschegovskij, A.; Sergeev, D.; Mustafin, N.; Naumenko, N.; Tugarinov, S.</i>	
<b>NORMAL AND REVERSED MAGNETIC SHEAR TOKAMAK EQUILIBRIA WITH SHEARED FLOWS OF ARBITRARY DIRECTION</b> .....	721
<i>Kaltsas, D.; Throumoulopoulos, G.</i>	
<b>EXPERIMENTAL AND GLOBAL GYROKINETIC STUDIES OF THE ISOTOPE EFFECT IN TURBULENT PLASMA DYNAMICS AND PARTICLE TRANSPORT AT THE FT-2 TOKAMAK</b> .....	725
<i>Gusakov, E.Z.; Gurchenko, A.D.; Niskala, P.; Altukhov, A.; Esipov, L.A.; Kantor, M.Y.; Kiviniemi, T.P.; Kouprienko, D.V.; Lashkul, S.I.; Leerink, S.; Perevalov, A.A.</i>	
<b>RADIATIVE TRAPPING OF ELECTRONS IN INTENSE CIRCULARLY POLARIZED LASER BEAMS</b> .....	729
<i>Kirk, J.G.</i>	
<b>AMPLIFICATION OF ULTRASHORT LASER PULSES BY STIMULATED BRILLOUIN BACKSCATTERING IN THE STRONG COUPLING REGIME</b> .....	733
<i>Gangolf, T.; Blecher, M.; Bolanos, S.; Lancia, L.; Marquès, J.; Cerchez, M.; Prasad, R.; Aurand, B.; Schluck, F.; Lehmann, G.; Chiaramello, M.; Riconda, C.; Weber, S.; Mourou, G.; Willi, O.; Fuchs, J.</i>	
<b>WEAKLY NONLINEAR DUST ACOUSTIC SHOCK WAVES IN A CHARGE VARYING ELECTRONEGATIVE MAGNETIZED DUSTY PLASMAS WITH NONISOTHERMAL TRAPPED ELECTRONS: APPLICATION TO THE HALLEY COMET.</b> .....	737
<i>Bacha, M.; Tribeche, M.</i>	
<b>RECOMBINATION OF H<sub>2</sub>D<sup>+</sup> AND HD<sub>2</sub><sup>+</sup> WITH ELECTRONS: A SPECTROSCOPIC STUDY</b> .....	741
<i>Dohnal, P.; Kálosi, Á.; Roucka, Š.; Plašil, R.; Glosik, J.</i>	
<b>MAGNETIC FIELD GENERATION FROM A FOIL-COIL TARGET USING KJ-NS CLASS LASERS</b> .....	745
<i>Singh, S.K.; Ahmed, H.; Dudzak, R.; Dostal, J.; Chodukowski, T.; Giuffrida, L.; Hadjisolomu, P.; Hodge, T.; Hrebicek, J.; Juha, L.; Kalinowska, Z.; Krousky, E.; Krus, M.; Lutoslawski, P.; Marco, M.D.; Pfeifer, M.; Skala, J.; Ullschmeid, J.; Pisarczyk, T.; Borghesi, M.; Kumar, D.; Kar, S.</i>	
<b>INVESTIGATION BALL LIGHTNING PENETRATION THROUGH ABSORBING FILTERS</b> .....	749
<i>Oreshko, A.G.; Oreshko, A.A.</i>	
<b>STABILITY OF LONG ROWS OF MAGNETIC ELECTRON VORTICES</b> .....	753
<i>Pavlenko, V.</i>	
<b>PARAMETRIC DEPENDENCE OF BEAM-ION-DRIVEN MODES IN NSTX AND NSTX-U</b> .....	757
<i>Fredrickson, E.D.; Bell, R.; Diallo, A.; LeBlanc, B.; Levinton, F.; Podestá, M.; Yuh, H.</i>	
<b>ULTRA SHALLOW JUNCTION DOPING BY HIGH DENSITY INDUCTIVELY COUPLED PLASMA FOR 3D DEVICES STRUCTURES</b> .....	761
<i>Kim, Y.; Hong, Y.; Berry, I.</i>	
<b>PERFORMANCE OF ECR HEATING DURING THE FIRST OPERATIONAL PHASE OF W7-X</b> .....	765
<i>Marsen, S.; Stange, T.; Gellert, F.; Hofel, U.; Laqua, H. P.; Moseev, D.; Preynas, M.</i>	
<b>INVESTIGATION OF EDGE FILAMENT DYNAMICS IN W7-X LIMITER PLASMAS</b> .....	769
<i>Kocsis, G.; Alonso, A.; Biedermann, C.; Cseh, G.; Dinklage, A.; Jakubowski, M.; König, R.; Krychowiak, M.; Otte, M.; Sunn Petersen, T.; Szepesti, T.; Zoletnik, S.</i>	
<b>OBSERVATIONS WITH THE VISIBLE OVERVIEW VIDEO DIAGNOSTIC SYSTEM DURING THE FIRST OPERATIONAL CAMPAIGN OF WENDELSTEIN 7-X</b> .....	773
<i>Szepesti, T.; Alonso, A.; Biedermann, C.; Dinklage, A.; Cseh, G.; Jakubowski, M.; Kocsis, G.; König, R.; Otte, M.; Sunn Pedersen, T.; Zoletnik, S.</i>	
<b>POWER LOADS IN THE LIMITER PHASE OF WENDELSTEIN 7-X</b> .....	777
<i>Niemann, H.; Jakubowski, M.; König, R.; Sunn Pedersen, T.; Wurden, G.A.; Effenberg, F.; Zhang, D.</i>	
<b>ECE MEASUREMENTS IN WENDELSTEIN 7-X PLASMAS</b> .....	781
<i>Hirsch, M.; Geiger, J.; Hartjuss, H.; Höfel, U.; Köster, F.; Maaßberg, H.; Marushchenko, N.; Schmuck, S.; Stange, T.; Svensson, J.; Tsuchiya, H.; Weir, G.; Wolf, R.</i>	
<b>FIRST MEASUREMENT ON ELECTRON HEAT TRANSPORT BY HEATWAVES IN THE CORE PLASMA OF WENDELSTEIN 7-X</b> .....	785
<i>Höfel, U.; Bozhentkov, S.; Fuchert, G.; Geiger, J.; Hartjuss, H.; Hirsch, M.; Köster, F.; Maassberg, H.; Marushchenko, N.; Pasch, E.; Schmuck, S.; Stange, T.; Tsuchiya, H.; Turkin, Y.; Velasco, J.; Weir, G.; Wolf, R.</i>	
<b>ELECTRON TEMPERATURE FLUCTUATION MEASUREMENTS IN WENDELSTEIN 7-X</b> .....	789
<i>Weir, G.M.; Grulke, O.; Hartjuss, H.; Hirsch, M.; Hoefel, U.; Marushchenko, N.; Tsuchiya, H.; Windisch, T.</i>	
<b>STATUS AND PROSPECTS OF THE MHD DIAGNOSTICS AT WENDELSTEIN 7-X STELLARATOR</b> .....	793
<i>Thomsen, H.; Andreeva, T.; Brandt, C.; Neuner, U.; Rahbarnia, K.; Alonso, A.; Endler, M.; Geiger, J.; Grahl, M.; Klinger, T.; Laqua, H.; Stange, T.; Svensson, J.; Turkin, Y.; Werner, A.</i>	
<b>COMMISSIONING OF THE MAGNETIC DIAGNOSTICS DURING THE FIRST OPERATION PHASE AT WENDELSTEIN 7-X</b> .....	797
<i>Rahbarnia, K.; Andreeva, T.; Cardella, A.; Carvalho, B.B.; Endler, M.; Hathiramani, D.; Geiger, J.; Grulke, O.; Lazerson, S.; Neuner, U.; Svensson, J.; Thomsen, H.; Werner, A.</i>	
<b>SPECTROSCOPIC IMPURITY SURVEY IN THE FIRST OPERATION PHASE OF WENDELSTEIN 7-X</b> .....	801
<i>Buttenschön, B.; Burhenn, R.; Kubkowska, M.; Czarnecka, A.; Fornal, T.; Krawczyk, N.; Zhang, D.; Pablant, N.; Langenberg, A.; Valson, P.; Thomsen, H.; Biel, W.; Aßmann, J.</i>	
<b>INVESTIGATION OF THE CORE RADIAL ELECTRIC FIELD IN WENDELSTEIN 7-X PLASMAS</b> .....	805
<i>Pablant, N.A.; Dinklage, A.; Landreman, M.; Langenberg, A.; Alonso, A.; Beidler, C.D.; Beurskens, M.; Bitter, M.; Bozhentkov, S.; Burhenn, R.; Delgado-Aparicio, L.F.; Fuchert, G.; Gates, D.A.; Geiger, J.; Hill, K.W.; Hoefel, U.; Hirsch, M.; Knauer, J.; Krämer-Flecken, A.; Lazerson, S.; Maassberg, H.; Marchuk, O.; Marushchenko, N.; Mikkelsen, D.; Pasch, E.; Satake, S.; Smith, H.; Svensson, J.; Traverso, P.; Turkin, Y.; Valson, P.; Velasco, J.L.; Weir, G.; Windisch, T.; Wolf, R.; Yokoyama, M.; Zhang, D.</i>	
<b>TEMPORAL EVOLUTION OF TEMPERATURE AND ARGON IMPURITY DENSITY PROFILES OBSERVED BY X-RAY IMAGING SPECTROMETER MEASUREMENTS AT WENDELSTEIN 7-X</b> .....	809
<i>Langenberg, A.; Pablant, N.A.; Marchuk, O.; Valson, P.; Traverso, P.; Burhenn, R.; Alonso, A.; Zhang, D.; Buttenschön, B.; Svensson, J.; Gates, D.; Beurskens, M.; Wolf, R.</i>	
<b>INVESTIGATION OF THE RADIATIVE POWER LOSS IN THE LIMITER PLASMAS OF W7-X</b> .....	813
<i>Zhang, D.; Burhenn, R.; Buttenschön, B.; Koenig, R.; Laube, R.; Thomsen, H.; Giannone, L.; Jenzsch, H.; Marquardt, M.; Werner, A.; Alonso, A.; Biedermann, C.; Bozhentkov, S.; Brakel, R.; Fuchert, G.; Grulke, O.; Hirsch, M.; Knauer, J.; Langenberg, A.; Laqua, H.P.; Otte, M.; Rahbarnia, K.; Schroeder, T.; Svensson, J.; Wenzel, U.; Wurden, G.; Pablant, N.; Pasch, E.; Kubkowska, M.; Czarnecka, A.; Fornal, T.</i>	
<b>FIRST RESULTS FROM THE THOMSON SCATTERING SYSTEM AT THE STELLARATOR WENDELSTEIN 7-X</b> .....	817
<i>Pasch, E.; Beurskens, M.; Bozhentkov, S.; Fuchert, G.; Hirsch, M.; Hoefel, U.; Knauer, J.; Kornejev, P.; Langenberg, A.; Pablant, N.; Wolf, R.</i>	
<b>A NEW DISPERSION INTERFEROMETER FOR THE STELLARATOR WENDELSTEIN 7-X</b> .....	821
<i>Knauer, J.; Kornejev, P.; Trimiño Mora, H.; Hirsch, M.; Werner, A.; Wolf, R.C.</i>	
<b>DETAILED DESIGN OF IMAGING BOLOMETER FIELDS OF VIEW FOR WENDELSTEIN 7-X</b> .....	825
<i>Peterson, B.; Sano, R.; Zhang, D.; Feng, Y.; Mukai, K.; Jakubowski, M.; Krychowiak, M.; Koenig, R.; Sunn Pedersen, T.</i>	
<b>PREDICTIONS OF NEUTRAL BEAM DEPOSITION AND ENERGETIC PARTICLE LOSSES IN W7-X</b> .....	829
<i>Lazerson, S.A.; Drevlak, M.; Bolgert, P.; Gates, D.; McMillan, M.</i>	
<b>THE WAVE-MODE PURITY IN ECRH: ADVANCED 3D RAY-TRACING MODELING FOR W7-X</b> .....	833
<i>Vakulchyk, I.; Aleynikov, P.; Marushchenko, N.</i>	
<b>PRELIMINARY RESULTS ON THE MEASUREMENT OF PLASMA EDGE PROFILES USING THE COMBINED PROBE ON W7-X</b> .....	837
<i>Drews, P.; Liang, Y.; Neubauer, O.; Liu, S.; Dostal, M.; Denner, P.; Rack, M.; Wang, N.; Nicolai, D.; Krämer-Flecken, A.; Grulke, O.; König, R.; Charl, A.; Schweer, B.; Gao, Y.; Hollfeld, K.P.; Saheeswaran, G.; Sandri, N.; Höschen, D.</i>	
<b>NEW HEATING AND DIVERTOR CAPABILITIES FOR TCV</b> .....	841
<i>Martin, Y.; Fasoli, A.; Karpushov, A.N.; Reimerdes, H.</i>	
<b>INFRARED MEASUREMENTS OF THE HEAT FLUX SPREADING UNDER VARIABLE DIVERTOR GEOMETRIES IN TCV</b> .....	845
<i>Maurizio, R.; Duval, B.; Elmore, S.; Fedorczak, N.; Gallo, A.; Labit, B.; Nespoli, F.; Reimerdes, H.; Sheikh, U.; Theiler, C.</i>	
<b>PROGRESS IN SIMULATING SOL PLASMA TURBULENCE WITH THE GBS CODE</b> .....	849
<i>Ricci, P.; Morales, J.; Nespoli, F.; Parua, P.; Riva, F.; Wersal, C.; Boedo, J. A.; Furno, I.; Halpern, F. D.; Labit, B.; Loizu, J.; Jolliet, S.</i>	
<b>PLASMA CONFINEMENT PROPERTIES AT HIGH DENSITY IN TCV AND T-10 TOKAMAKS</b> .....	853
<i>Kirneva, N.A.; Blanchard, P.; Coda, S.; Kakurin, A.M.; Karpushov, A.; Kliuchnikov, L.A.; Krupin, V.A.; Krylov, S.V.; Kudlacek, O.; Labit, B.; Maltsev, S.G.; Moret, J.; Myalton, T.B.; Pavlov, Y.D.; Ryjakov, D.V.; Sauter, O.; Sarichev, D.V.; Sergeev, D.S.; Solomatin, R.Y.; Testa, D.; Trukhin, V.M.; Trukhina, E.V.; Vershkov, V.A.</i>	

<b>PARTICLE DENSITY MODELING FOR REAL-TIME DENSITY PROFILE RECONSTRUCTION AND FRINGE JUMP DETECTION ON TCV AND ASDEX UPGRADE</b> .....	857
<i>Blanken, T.; Felici, F.; Rapson, C.</i>	
<b>NEW TOROIDAL MAGNETIC PROBE ARRAYS FOR NON-AXISYMMETRIC MAGNETIC PERTURBATION MEASUREMENTS IN KSTAR TOKAMAK</b> .....	861
<i>Bak, J.; Kim, H.; Kim, J.; Hahn, S.; In, Y.</i>	
<b>MEASUREMENT AND ANALYSIS OF HELICON WAVE COUPLINGS FOR CURRENT DRIVE IN KSTAR</b> .....	865
<i>Wang, S.; Wi, H.; Kim, H.; Jeong, J.; Kwak, J.</i>	
<b>THE INITIAL CHARACTERISTICS OF 80KEV ION SOURCE FOR A 5MW NEUTRAL BEAM INJECTOR</b> .....	869
<i>Zou, G.; Cao, J.; Wei, H.; Liu, H.; Yu, P. X.; Zhou, H. X.; Zhou, B. W.</i>	
<b>RECENT PROGRESS OF MHD ACTIVITIES INDUCED BY ENERGETIC ELECTRONS IN THE HL-2A ECRH PLASMAS</b> .....	873
<i>Yu, L.; Chen, W.; Ding, X. T.; Ji, X. Q.; Shi, Z. B.; Jiang, M.; Ma, R. R.; Li, Y. G.; Song, S. D.; Yuan, B. S.; Ma, R.; Zhou, Y.; Song, X. M.; Dong, J. Q.; Xu, M.; Liu, Y.; Yan, L. W.; Yang, Q. W.; Xu, Y. H.; Duan, X. R.</i>	
<b>INFLUENCE OF TOROIDAL ALFVÉNIC INSTABILITY ON RUNAWAY ELECTRON GENERATION IN HL-2A TOKAMAK</b> .....	877
<i>Dong, Y.; Xu, Y.; Liu, Y.; Peng, X.; Pan, O.; Ding, X.; Yang, Q.; Duan, X.</i>	
<b>WALL CONDITIONING BY ECRH AND GDC AT THE WENDELSTEIN 7-X STELLARATOR</b> .....	881
<i>Wauters, T.M.; Stange, T.; Laqua, H. P.; Brakel, R.; Marsen, S.; Moseev, D.; Sunn Pedersen, T.; Volzke, O.; Brezinsek, S.; Dinklage, A.</i>	
<b>IMPACT OF FLOW SHEAR ON EDGE-LOCALIZED MODE ENERGY LOSS FOR DIFFERENT COLLISIONALITY REGIMES</b> .....	885
<i>Kong, D.; Xu, X.; Huang, C.; Gao, X.; Chen, J.</i>	
<b>PRELIMINARY STUDY OF THE CONTROL ALGORITHM FOR ADVANCED DIVERTOR CONFIGURATION</b> .....	889
<i>Li, J.; Zheng, G. Y.; Song, X. M.; Zhang, J. H.; Ma, R.; Pan, Y.</i>	
<b>TRANSLATIONAL SYMMETRY WITH PHASE SHIFT IN BALLOONING MODE</b> .....	893
<i>Kikuchi, M.</i>	
<b>NEW CONCEPT OF EDGE STOCHASTIZATION BY TOROIDAL FIELD MODULATION</b> .....	897
<i>Matsunaga, G.; Suzuki, Y.; Shinohara, K.; Ide, S.</i>	
<b>IMPACTS OF SHEARED TOROIDAL ROTATION ON MAGNETIC ISLAND IN 3D MHD EQUILIBRIA</b> .....	901
<i>Suzuki, Y.; Hegna, C.; Nakamura, Y.</i>	
<b>PREDICTIVE CAPABILITY OF HYDROGENIC AND IMPURITY DENSITY IN L MODE DISCHARGES DIII-D TOKAMAK USING MIXED BOHM/GYRO-BOHM TRANSPORT MODEL</b> .....	905
<i>Buangam, W.; Onjun, T.; Suwanna, S.</i>	
<b>FUSION POWER AND BOOTSTRAP CURRENT FRACTION SIMULATIONS OF THE PPCS DEMO DESIGNS USING BALDUR CODE</b> .....	909
<i>Prompting, J.; Onjun, T.; Picha, R.; Chathong, B.; Kanjanaput, W.; Buangam, W.; Pianroj, Y.; Poolyarat, N.</i>	
<b>IMPURITY ACCUMULATION AND PARTICLE BEHAVIOUR WITH THE PRESENCE OF TRANSPORT BARRIERS IN ITER AND DEMO</b> .....	913
<i>Chathong, B.; Kanjanaput, W.; Prompting, J.; Picha, R.; Onjun, T.</i>	
<b>MODELLING OF EFFECTS OF SATURATED NEOCLASSICAL TEARING MODES ON TRANSPORT IN TOKAMAKS</b> .....	917
<i>Kanjanaput, W.; Onjun, T.; Otaviani, M.; Garbet, X.</i>	
<b>CONTROLLED EMERGENCY PLASMA TERMINATION IN ITER</b> .....	921
<i>Gribov, Y.; Kavin, A.; Lukash, V.; Khayrudinov, R.; Mineev, A.; Huijsmans, G.</i>	
<b>VERIFYING PB3D: A NEW CODE FOR 3D IDEAL LINEAR PEELING-BALLOONING STABILITY</b> .....	925
<i>Weyens, T.; Sánchez, R.; Garcia, L.; Huijsmans, G.; Loarte, A.</i>	
<b>DENSITY CONTROL IN ITER: AN ITERATIVE LEARNING CONTROL AND ROBUST CONTROL APPROACH</b> .....	929
<i>Ravensbergen, T.; Vries, P.D.; Felici, F.; Nouailletas, R.; Blanken, T.; Zabeo, L.</i>	
<b>AN ACTIVE FEEDBACK PLASMA PROFILE CONTROL APPROACH APPLIED TO TCV PLASMAS AND PERSPECTIVES TOWARD ITER</b> .....	933
<i>Kim, D.; Kim, S.; Felici, F.; Maljaars, B.; Sauter, O.</i>	
<b>RUNAWAY ELECTRON BEAM DISSIPATION IN TOKAMAK DISRUPTIONS</b> .....	937
<i>Martin-Solis, J.R.; Hollmann, E.; Loarte, A.; Lehnen, M.</i>	
<b>ITER DISRUPTION SIMULATIONS WITH IMPROVED POWER BALANCE IN THE HALO REGION</b> .....	941
<i>Kiramov, D.; Lehnen, M.; Khayrudinov, R.; Lukash, V.</i>	
<b>DETECTION OF NEOCLASSICAL TEARING MODES IN ITER USING ELECTRON CYCLOTRON EMISSION WITH INLINE CONFIGURATION</b> .....	945
<i>Figini, L.; Farina, D.; Micheletti, D.; Rispoli, N.; Sozzi, C.</i>	
<b>EFFECT OF DIVERTOR PLASMA CONDITIONS AND DRIFTS ON ELM POWER FLUXES AT THE ITER DIVERTOR TARGETS</b> .....	949
<i>Hosokawa, M.; Loarte, A.; Huijsmans, G.; Takizuka, T.; Hayashi, N.</i>	
<b>SMOLA DEVICE FOR HELICAL MIRROR CONCEPT EXPLORATION</b> .....	953
<i>Sudnikov, A.V.; Beklemishev, A.D.; Postupaev, V.V.; Burdakov, A.V.; Ivanov, I.A.; Vasilyeva, N.G.; Kuklin, K.N.; Makarov, A.G.; Sidorov, E.N.</i>	
<b>ANALYTICAL MODEL OF THE MULTIPLE-MODE SIDEWAYS FORCES IN TOKAMAKS</b> .....	957
<i>Mironov, D.; Pustovitov, V.</i>	
<b>PHYSICAL CONSTRAINTS ON THE DESIGN OF THE DEMOPELLET FUELING SYSTEM</b> .....	961
<i>Pégourié, B.; Day, C.; Frattolillo, A.; Koechl, F.; Lang, P.</i>	
<b>WHERE TO LOCATE DEMO IN A ONE-STEP-TO-AN-FPP STRATEGY</b> .....	965
<i>Zohm, H.; Trauble, F.; Biel, W.; Fable, E.; Kemp, R.; Wenninger, R.</i>	
<b>RESISTIVE WALL MODE STABILITY IN JT-60SA HIGH <math>\beta_N</math> SCENARIOS</b> .....	969
<i>Pigatto, B.; Bolzonella, T.; Garcia, J.; Guo, S.; Liu, Y.; Xu, X.</i>	
<b>NONLINEAR 3D ANALYSIS OF JT-60SA N=0 INSTABILITIES</b> .....	973
<i>Villone, F.; Mastrostefano, S.</i>	
<b>MULTI-ION PLASMA EXPANSION IN THE PRESENCE OF SUPRATHERMAL ELECTRONS</b> .....	977
<i>Elkamash, I.; Kourakis, I.</i>	
<b>CHERENKOV RADIATION FROM SHORT LASER PULSES IN A MAGNETIZED PLASMA WITH VARIABLE DENSITY</b> .....	981
<i>Malekshahi, M.</i>	
<b>MEASURING AND INCREASING THE SAFETY MARGIN OF HIGH-GAIN SHOCK-IGNITED TARGETS</b> .....	985
<i>Atzeni, S.; Antonelli, L.; Marocchino, A.; Schiavi, A.; Picone, S.; Volponi, G.</i>	
<b>COUNTERBEAM FAST IGNITION EXPERIMENTS AND THE RELATED STUDIES</b> .....	989
<i>Kitagawa, Y.; Mori, Y.; Nishimura, Y.; Ishii, K.; Hanahaya, R.; Nakayama, S.; Sekine, T.; Sato, N.; Kurita, T.; Kawashima, T.; Kan, H.; Komeda, O.; Nishi, T.; Hioki, T.; Motohiro, T.; Azuma, H.; Sunahara, A.; Sentoku, Y.; Miura, E.; Arikawa, Y.; Abe, Y.; Ozaki, S.</i>	
<b>SHORT WAVELENGTH EFFECTS ON FAST ELECTRON GENERATION IN FAST IGNITION</b> .....	993
<i>Sakagami, H.; Sato, R.; Sunahara, A.; Arikawa, Y.; Johzaki, T.; Nagatomo, H.</i>	
<b>MEASUREMENT OF ULTRA-INTENSE LASER DRIVEN SHOCK VELOCITY BY FREQUENCY DOMAIN INTERFEROMETER USING CHIRPED PULSE LASER</b> .....	997
<i>Ishii, K.; Nishimura, Y.; Mori, Y.; Hanayama, R.; Kitagawa, Y.; Sekine, T.; Kurita, T.; Sato, N.; Kawashima, T.; Kan, H.; Hioki, T.; Motohiro, T.; Azuma, H.; Sunahara, A.; Sentoku, Y.; Miura, E.</i>	
<b>EXPLORING PARADIGMS FOR ENERGY CONVERSION UNDER COMPRESSION</b> .....	1001
<i>Fisch, N.J.; Davidovits, S.; Geyko, V. I.</i>	
<b>AN EFFICIENT METHOD OF SOLUTION FOR COLLISIONAL RELAXATION OF TRAPPED PARTICLES</b> .....	1005
<i>Zhykharisky, A.V.; Kuhn, S.</i>	
<b>3D PLASMA DYNAMICS STUDIES IN TORPEX USING A DUAL LANGMUIR PROBE ARRAY</b> .....	1009
<i>Baquero-Ruiz, M.; Avino, F.; Chellai, O.; Fasoli, A.; Furno, I.; Manke, F.; Ricci, P.</i>	
<b>THE CONTRIBUTION OF SPIN RADIATION REACTION FORCES OF CLASSICAL PARTICLES IN PLASMAS IN INHOMOGENEOUS ELECTROMAGNETIC FIELDS</b> .....	1013
<i>Asenjo, F.; Hazeltine, R.D.; Mahajan, S.M.</i>	
<b>TRAPPING OF ELECTRON BERNSTEIN WAVES IN A MAGNETIC MIRROR CONFIGURATION</b> .....	1017
<i>Rumiantsev, K.; Holzhauer, E.; Kasperek, W.</i>	
<b>SPECTROSCOPIC MEASUREMENTS OF HYDROGEN DISSOCIATION DEGREE AND H- PRODUCTION IN RESONANT ANTENNA-GENERATED HELICON PLASMAS</b> .....	1021
<i>Marini, C.; Duval, B.P.; Furno, I.; Howling, A.A.; Jacquier, R.; Karpushov, A.N.; Guittienne, P.; Fantz, U.; Wunderlich, D.; Bechu, S.; Simonin, A.</i>	
<b>ANTHYDROGEN SYNTHESIS VIA MAGNETOBOUND STATES OF PROTONIUM WITHIN PROTON-POSITRON-ANTIPOSITRON PLASMAS</b> .....	1025
<i>Hermosillo, M.; Ordonez, C.A.</i>	
<b>QUASI-STATIC ELECTROMAGNETIC INSTABILITIES IN RELATIVISTIC PLASMAS HEATED BY AN ELECTROMAGNETIC WAVE</b> .....	1029
<i>Bendib-Kalache, K.; Medjkoune, Y.; Bendib, A.</i>	
<b>EFFECT OF A FINITE ANTIPOSITRON MASS ON ANTHYDROGEN SYNTHESIS VIA MAGNETOBOUND POSITRONIUM WITHIN ELECTRON-POSITRON-ANTIPOSITRON PLASMAS</b> .....	1033
<i>Thornton, E.A.; Ordonez, C.A.</i>	
<b>MEASUREMENTS OF PLASMA PARAMETERS USING A FAST SWEEPING LANGMUIR PROBE IN THE VINETA-II MAGNETIC RECONNECTION EXPERIMENT</b> .....	1037
<i>Shesterikov, I.; Grulke, O.; Stenzel, R.; Klinger, T.</i>	
<b>STRUCTURE OF RESONANT MAGNETIC PERTURBATION IN LHD DETACHED PLASMA</b> .....	1041
<i>Narushima, Y.; Kobayashi, M.; Tanaka, H.; Sakakibara, S.; Suzuki, Y.; Watanabe, K.Y.; Ohdachi, S.; Takemura, Y.; Akiyama, T.; Ohno, N.; Castejon, F.; Lopez-Bruna, D.</i>	
<b>OBSERVATION OF SECONDARY INSTABILITY OF 2/I MAGNETIC ISLAND IN COMPASS HIGH DENSITY LIMIT PLASMAS</b> .....	1045
<i>Shah, S.; Salzedas, F.; Havlicek, J.; Stockel, J.; Silval, C.</i>	
<b>OBSERVATIONS OF ALFVENIC-CHARACTER OSCILLATIONS IN OHMIC PLASMAS ON THE COMPASS TOKAMAK</b> .....	1049
<i>Markovic, T.; Melnikov, A.; Seidl, J.; Eliseev, L.; Havlicek, J.; Havranek, A.; Hron, M.; Imrisek, M.; Kovarik, K.; Medvedev, S.; Mitosinkova, K.; Mlynar, J.; Naydenkova, D.; Panek, R.; Stockel, J.; Varju, J.; Weinzettl, V.</i>	
<b>TOKAMAK GOLEM FOR FUSION EDUCATION - CHAPTER 7</b> .....	1053
<i>Duban, R.; Ficker, O.; Grover, O.; Jiráková, K.; Leitl, B.; Okonečnicková, T.; Stöckel, J.; Svoboda, V.; Vondrášek, G.</i>	
<b>MODELING THERMAL BEHAVIOR ON THE FTU LIQUID LITHIUM LIMITER</b> .....	1057
<i>Buscarino, A.; Corradino, C.; Fortuna, L.; Frasca, M.; Apicella, M.; Mazzitelli, G.; Xibilla, M.</i>	
<b>CHARACTERIZATION OF FIRST WALL MATERIALS IN RFX-MOD</b> .....	1061
<i>Canton, A.; Innocente, P.; Deambrosio, S.; Grando, L.; Miorin, E.; Siragusa, M.; Visonà, N.</i>	
<b>NON-LINEAR EVOLUTION OF RFX-MOD TOKAMAK EQUILIBRIA DURING L-H TRANSITION INCLUDING 3D WALL EFFECTS</b> .....	1065
<i>Abate, D.; Marchiori, G.; Villone, F.</i>	

<b>TOKAMAK EXPERIMENTS IN RFX-MOD WITH POLARIZED INSERTABLE ELECTRODE</b> .....	1069	<b>THE IMPORTANCE OF THE NON THERMAL DISTRIBUTION EFFECTS IN THE EVALUATION OF THE RF WAVE-FIELD AND THE ION DISTRIBUTION FUNCTIONS IN TOKAMAK PLASMAS</b> .....	1165
<i>Marrelli, L.; Carraro, L.; Cavazzana, R.; Dal Bello, S.; De Masi, G.; Ferro, A.; Finotti, C.; Franz, P.; Grando, L.; Innocente, P.; Kudlacek, O.; Marchiori, G.; Martines, E.; Paccagnella, R.; Piovesan, P.; Piron, C.; Puiatti, M.; Recchia, M.; Scarin, P.; Spagnolo, S.; Spolaore, M.; Taliervo, C.; Zaniol, B.; Zanotto, L.; Zuin, M.</i>		<i>Bertelli, N.; Valeo, E.J.; Lee, J.; Bonoli, P.T.; Gorelenkova, M.; Green, D.L.; Jaeger, E.F.; Phillips, C.K.; Wright, J.C.</i>	
<b>CURRENT SHEET FRAGMENTATION FOLLOWING MAGNETIC RECONNECTION IN RFP PLASMAS</b> .....	1073	<b>TEMPERATURE DYNAMICS AND VELOCITY SCALING LAWS FOR INTERCHANGE DRIVEN, WARM ION PLASMA FILAMENTS</b> .....	1169
<i>Cordaro, L.; Zuin, M.; Momo, B.; Martines, E.; Spolaore, M.; Auriemma, F.; Cavazzana, R.; De Masi, G.; Scarin, P.; Spagnolo, S.; Vianello, N.; Cester, D.; Stevanato, L.; Isliker, H.; Vlahos, L.; Schneider, W.</i>		<i>Olsen, J.M.; Madsen, Nielsen, A. H.; Rasmussen, J. J.; Naulin, V.</i>	
<b>SENSITIVITY OF THOMSON SCATTERING MEASUREMENTS ON ELECTRON DISTRIBUTION MODELLING IN LOW DENSITY RFP PLASMAS</b> .....	1077	<b>NUMERICAL SIMULATIONS OF BLOB DYNAMICS WITH FINITE ION TEMPERATURE</b> .....	1173
<i>Fassina, A.; Franz, P.</i>		<i>Nielsen, A.H.; Madsen, J.; Rasmussen, J.J.; Xu, G.S.; Naulin, V.; Coelho, R.; Olsen, J.M.; Løjten, M.; Hansen, S.K.; Yan, N.; Tophøj, L.E.; Wan, B.</i>	
<b>HAMILTONIAN BUMP-ON-TAIL MODEL: INTERPRETATION OF EP/AE INTERACTION</b> .....	1081	<b>THE EFFECT OF MAGNETIC FIELD GEOMETRY ON FILAMENTARY PLASMA STRUCTURES IN TJ-K</b> .....	1177
<i>Carlevaro, N.; Montani, G.; Wang, X.; Zonca, F.</i>		<i>Garland, S.; Fuchert, G.; Ramisch, M.; Hirth, T.</i>	
<b>LINEAR MICROSTABILITY INVESTIGATION OF A NEON IMPURITY SEEDED FTU PLASMA</b> .....	1085	<b>RE-DEPOSITION OF IMPURITIES ON THE ITER DIAGNOSTIC FIRST WALL</b> .....	1181
<i>Mazouza, C.; Dolci, V.; Marinucci, M.; Pucella, G.; Puiatti, M.; Romanelli, M.; Szepesi, G.; Tudisco, O.</i>		<i>Kotov, V.</i>	
<b>RUNAWAY ELECTRONS GENERATION IN FTU DURING EC ASSISTED BREAKDOWN DISCHARGES</b> .....	1089	<b>PLASMA CURRENT AND ROTATION GENERATED BY FAST BEAM IONS, AND BOOTSTRAP CURRENT IN A COMPACT HIGH FIELD SPHERICAL TOKAMAK</b> .....	1185
<i>Granucci, G.; Ricci, D.; Bin, W.; Causa, F.; Esposito, B.; Farina, D.; Figini, L.; Garavaglia, S.; Martin-Solis, J.R.; Møllera, V.; Moro, A.; Popovic, Z.; Putignano, O.</i>		<i>Nicolai, A.; Gryaznevich, M.</i>	
<b>MODELLING OF W DUST DYNAMICS RELATED TO RADIATING PLASMOID FORMATION</b> .....	1093	<b>THREE-DIMENSIONAL GYROFLUID FILAMENT SIMULATIONS IN TOKAMAK SCRAPE-OFF LAYERS</b> .....	1189
<i>Gervasini, G.; Uccello, A.; Lazaro, E.; Ghezzi, F.</i>		<i>Wiesenberger, M.; Held, M.; Kendl, A.</i>	
<b>DEVELOPMENT OF A THERMAL HELIUM BEAM EMISSION DIAGNOSTIC FOR WEST</b> .....	1097	<b>BENCHMARKING THE GENERALIZED RUTHERFORD EQUATION WITH REDUCED MHD SIMULATIONS</b> .....	1193
<i>Jones, O.M.; Meyer, O.; Xu, H.; Sorrentino, S.; Baude, R.; Escarguel, A.; Harris, J.H.; Hatchressian, J.; Klepper, C.C.; Larroque, S.; Lotte, P.; Pascal, J.; Pegourie, B.</i>		<i>Westerhof, E.; Pratu, J.</i>	
<b>SYNTHETIC SXR DIAGNOSTIC USING GEM DETECTORS ON WEST: DEVELOPMENT IN THE PROSPECT OF TUNGSTEN MONITORING</b> .....	1101	<b>MHD-PIC SIMULATIONS OF IMPURITY TRANSPORT BY ELMS</b> .....	1197
<i>Jardin, A.; Macon, D.; O'Mullane, M.; Chernyshova, M.; Czarski, T.; Malinowski, K.; Kasprovicz, G.; Wojenski, A.; Pozniak, K.; Malard, P.; Bourdelle, C.</i>		<i>van Vugt, D.C.; Huijsmans, G.; Kamp, L.; Loarte, A.; Lopes Cardozo, N.</i>	
<b>VISIBLE SPECTRO-TOMOGRAPHY: FROM LOW TEMPERATURE LABORATORY PLASMAS TO THE WEST TOKAMAK</b> .....	1105	<b>NON-LINEAR MHD SIMULATIONS OF ELMS IN A HIGH RECYCLING DIVERTOR</b> .....	1201
<i>Baude, R.; Escarguel, A.; David, P.; Camenen, Y.; Jones, O.; Meyer, O.</i>		<i>Verbeek, M.; Huijsmans, Van Vugt, D. C.; Loarte, A.; Fil, A.; Nardon, E.</i>	
<b>RECONSTRUCTION OF 3-D VMEC EQUILIBRIA WITH HELICAL CORES IN DIII-D</b> .....	1109	<b>ROLE OF INCREASED MAGNETIC FIELD STOCHASTICITY DUE TO TEST BLANKET MODULES ON RADIAL TRANSPORT OF THERMAL PARTICLES</b> .....	1205
<i>Wingen, A.; Wilcox, R.S.; Cianciosa, M.R.; Seal, S.K.; Unterberg, E.A.; Hirshman, S.P.; Piovesan, P.; Turco, F.</i>		<i>Särkimäki, K.; Kurki-Suonio, T.; Parail, V.; Liu, Y.; Saibene, G.</i>	
<b>EXPLORATION OF THE MEANS FOR REAL-TIME PROBING OF M/N=2/1 TEARING MODE STABILITY EVOLUTION IN THE ITER BASELINE SCENARIO IN DIII-D</b> .....	1113	<b>FREE BOUNDARY SIMULATIONS WITH THE XTOR-2F CODE</b> .....	1209
<i>La Haye, R.J.; Strait, E.; Olofsson, E.; Volpe, F.; Ferraro, N.; Choi, W.; Hanson, J.; Lanctot, M.; Logan, N.; Paz-Soldan, C.; Solomon, W.; Sweeney, R.; Turco, F.; Welander, A.</i>		<i>Marx, A.; Lutjens</i>	
<b>ANALYSIS OF M/N=2/1 LOCK MODE DISRUPTION DATABASE FROM THE DIII-D TOKAMAK</b> .....	1117	<b>ELECTROMAGNETIC HOMOGENIZATION IN A BLOB-POPULATED SCRAP-OFF LAYER OF MAGNETICALLY CONFINED PLASMAS</b> .....	1213
<i>Sweeney, R.; Choi, W.; La Haye, R.J.; Mao, S.; Olofsson, K.E.; Volpe, F.A.</i>		<i>Bairaktaris, F.; Hizanidis, K.; Valvis, S.; Ram, A.</i>	
<b>TBM TORQUE SCALING WITH <math>\beta_N</math> IN DIII-D</b> .....	1121	<b>SCATTERING BY SPHERICAL BLOBS IN PLASMA: A DISCRETE EIGENFUNCTION APPROACH</b> .....	1217
<i>Salmi, A.; Lanctot, M.J.; Logan, N.C.; Tala, T.; deGrassie, J.; Grierson, B.A.; Paz-Soldan, C.; Solomon, W.M.</i>		<i>Zouros, G.; Kokkorakis, G.; Hizanidis, K.; Valvis, S.; Roumeliotis, J.; Ram, A.</i>	
<b>MODEL OF ELM SUPPRESSION BY RMPS IN DIII-D</b> .....	1125	<b>MODELING THE INTERPLAY BETWEEN MAGNETIC ISLAND DYNAMICS AND TRANSPORT BARRIER FORMATION</b> .....	1221
<i>Callen, J.D.; Beidler, M.T.; Ferraro, N.M.; Hegna, C.C.; La Haye, R.J.; Nazikian, R.; Paz-Soldan, C.</i>		<i>Martinell, J.J.; Cancino, S.; Lopez-Bruna, D.</i>	
<b>COMPARISONS OF LINEAR SINGLE-FLUID MHD MAGNETIC FIELD LINE TRAJECTORIES IN DIII-D AND NSTX-U DURING 3D MAGNETIC PERTURBATIONS</b> .....	1129	<b>ALPHA HEATING IN MAGNETIC AND INERTIAL CONFINEMENT FUSION</b> .....	1225
<i>Wu, W.; Evans, T.E.; Canal, G.P.; Ferraro, N.; Lyons, B.C.; Orlov, D.; Zhao, X.</i>		<i>Throumoulopoulos, G.N.; Lalouis, P.; Poulipoulis, G.</i>	
<b>DENSITY DRIVEN ROTATION CHANGES IN DIII-D LOW COLLISIONALITY H-MODE PLASMAS</b> .....	1133	<b>TURBULENCE WAVE NUMBER SPECTRA RECONSTRUCTION FROM RADIAL CORRELATION DOPPLER REFLECTOMETRY DATA</b> .....	1229
<i>Mordijck, S.; Chrystal, C.; Grierson, B.; Ko, W.; Rhodes, T.; Schmitz, L.; Zeng, L.; Diamond, P.; Doyle, E.; Petty, C.; Salmi, A.; Solomon, W.; Staebler, G.; Tuomas, T.; Wang, X.</i>		<i>Gusakov, E.; Irzak, M.; Krutkin, O.; Popov, A.</i>	
<b>ROLE OF PLASMA-WALL INTERACTION IN THE TRANSIENT PROCESSES IN THE CURRENTLESS PLASMA OF THE L-2M STELLARATOR AFTER SWITCHING-ON OF AUXILIARY ECR HEATING</b> .....	1137	<b>QUASIOPTICAL APPROACH TO RECONSTRUCTION OF PLASMA FLUCTUATIONS PARAMETERS USING AMPLITUDE DISTRIBUTION OF TRANSMITTED BEAM</b> .....	1233
<i>Kharchev, N.; Batanov, G.; Berezhetskii, M.; Borzosekov, V.; Grebenschikov, S.; Grishina, I.; Kharchevskii, A.; Khol'nov, Y.; Koltik, L.; Konchekov, E.; Larionova, N.; Letunov, A.; Logvinenko, V.; Malakhov, D.; Meshcheryakov, A.; Petrov, A.; Sarkisyan, K.; Shchepetov, S.; Skvortsova, N.; Stepakhin, V.; Vafin, I.; Vasilkov, D.</i>		<i>Gospodchikov, E.D.; Sobolev, D.I.; Khusainov, T.; Balakin, A.; Shalashov, A.</i>	
<b>ALFVEN INSTABILITIES IN HYDROGEN, DEUTERIUM AND HELIUM PLASMAS IN OHMIC REGIME OF TUMAN-3M TOKAMAK</b> .....	1141	<b>COMPREHENSIVE INVESTIGATION OF LASER ENERGY TRANSPORT TO A MASSIVE PLANAR TARGETS WITH FEMTOSECOND POLARO-INTERFEROMETRY</b> .....	1237
<i>Lebedev, S.V.; Askinazi, L.; Balachenkov, I.; Belokurov, A.; Kornev, V.; Tukachinsky, A.; Zhubr, N.</i>		<i>Pisarczyk, T.; Gus'kov, S.Y.; Chodukowski, T.; Dostal, J.; Dudzak, R.; Kalinowska, Z.; Korneev, P.; Zaraz-Szydłowska, A.; Demchenko, N.N.; Cikhart, J.; Borodziuk, S.; Rosinski, M.; Klir, D.; Cikhartova, B.; Kubes, P.; Krousky, E.; Krus, M.; Ullschmied, J.; Hrebicek, J.; Medrik, T.; Golasowski, J.; Pfeifer, M.; Renner, O.; Smid, M.; Singh, S.K.; Kar, S.; Ahmed, H.; Skala, J.; Pisarczyk, P.</i>	
<b>COMMISSIONING UPGRADES TO THE NSTX-U PLASMA CONTROL SYSTEM</b> .....	1145	<b>NON-CLASSIC EFFICIENT CAVITY PRESSURE ACCELERATION METHOD APPLIED TO OBTAIN VERY FAST AND DENSE MACROPARTICLES</b> .....	1241
<i>Boyer, M.D.; Battaglia, D.; Eidietis, N.; Erickson, K.; Ferron, J.; Gates, D.; Gerhardt, S.; Johnson, R.; LeBlanc, B.; Menard, J.; Mueller, D.; Myers, C.; Sabbagh, S.</i>		<i>Borodziuk, S.; Pisarczyk, T.; Chodukowski, T.; Kalinowska, Z.; Kasperczuk, A.; Dostal, J.; Dudzak, R.; Krousky, E.; Ullschmied, J.; Pfeifer, M.; Skala, J.; Pisarczyk, P.</i>	
<b>EXTENDED-MHD MODELING OF TOKAMAK DISRUPTIONS AND RESISTIVE WALL MODES WITH M3D-C1</b> .....	1149	<b>MODE STRUCTURE OF A SHORT LASER PULSE PROPAGATING THROUGH A METAL CAPILLARY</b> .....	1245
<i>Ferraro, N.; Pfeifferle, D.; Jardin, S.C.; Myers, C.E.; Lao, L.L.</i>		<i>Tuev, P.; Lotov, K.</i>	
<b>C-2U: A SUSTAINED NEUTRAL BEAM DRIVEN FIELD-REVERSED CONFIGURATION</b> .....	1153	<b>LASER-DRIVEN COLLISIONLESS SHOCK ACCELERATION OF PROTONS</b> .....	1249
<i>Schmitz, L.; Binderbauer, M.; Gota, H.; Tajima, T.; Lau, C.; Fulton, D.; Lin, Z.; Deng, B.; Putvinski, S.; Dettrick, S.; Tuszewski, M.; Garate, E.; Korerpanov, S.; Smirnov, A.; Thompson, M.</i>		<i>Svedung Wettervik, B.F.; DuBois, T.C.; Fülöp, T.</i>	
<b>RESONANT STELLARATOR DIVERTOR</b> .....	1157	<b>EXPLOSIVE NONLINEAR GROWTH OF DOUBLE TEARING MODE: PLASMOID FORMATION AND TEST PARTICLE ACCELERATION</b> .....	1253
<i>Punjabi, A.; Boozer, A.</i>		<i>Akramov, T.; Baty, H.</i>	
<b>HOMOCLINIC TANGLE OF THE PRIMARY SEPARATRIX IN THE COMPACT AND CLOSED MAGNETIC TOPOLOGY FOR DIVERTOR TOKAMAKS</b> .....	1161	<b>NONLINEAR SELF-CONSISTENT KINETIC SIMULATIONS OF THE ANOMALOUS DOPPLER INSTABILITY OF SUPRATHERMAL ELECTRON POPULATIONS IN FUSION PLASMAS</b> .....	1257
<i>Ali, H.; Punjabi, A.</i>		<i>Irvine, S.; Chapman, S.; Dendy, R.</i>	
		<b>ANALYTICAL MODEL FOR DISSIPATIVE SHOCKS IN PAIR PLASMAS UNDER THE COMBINED EFFECT OF COLLISIONALITY AND KINEMATIC VISCOSITY</b> .....	1261
		<i>Elkamash, I.; Kourakis, I.</i>	

THE STATIC ELECTRICAL CONDUCTIVITY OF THE FULLY IONIZED PLASMA IN THE FIRST BORN APPROXIMATION OF THE LINEAR RESPONSE THEORY .....	1265
<i>Karakhtanov, V.S.</i>	
COLLISIONAL-RADIATIVE MODEL OF NANOSECOND REPETITIVELY PULSED DISCHARGES AND DIELECTRIC BARRIER DISCHARGES IN HYDROGEN PLASMAS .....	1269
<i>D'Ammando, G.; Colonna, G.; Pietanza, L.</i>	
MICRON SIZED PARTICLE SEPARATION IN THE PAUL TRAP .....	1273
<i>Lapitsky, D.</i>	
DUSTY STRUCTURES INFLUENCE ON EXCITED ATOMS DENSITIES IN PLASMA .....	1277
<i>Kobylin, V.; Pikalev, A.</i>	
POSITIVE COLUMN DISCHARGE MODEL WITH CONSIDERATION OF RESONANCE RADIATION TRANSPORT .....	1281
<i>Golubovskii, Y.; Siasko, A.</i>	
NUMERICAL SIMULATIONS OF LASER-PLASMA INTERACTION WITH "NANOSTRUCTURED TARGETS" .....	1285
<i>Fedeli, L.; Cialfi, L.; Formenti, A.; Passoni, M.</i>	
BRIGHT GAMMA-RAY SOURCE FROM INTENSE LASER PULSES OBLIQUELY INCIDENT ON A PLASMA LAYER .....	1289
<i>Serebryakov, D.; Nerush, E.; Kostyukov, I.</i>	
<b>Author Index</b>	

## Microturbulence-induced modifications to the alpha particle distribution and associated effects

G. J. Wilkie<sup>1</sup>, I. G. Abel<sup>2</sup>, M. Landreman<sup>3</sup>, W. Dorland<sup>3</sup>

<sup>1</sup> *Department of Physics, Chalmers University of Technology, Göteborg, Sweden*

<sup>2</sup> *Princeton University, Princeton, NJ, USA*

<sup>3</sup> *University of Maryland, College Park, MD, USA*

The transport of alpha particles is of critical importance to a burning DT fusion reactor. Among other important phenomena, turbulence driven by microinstabilities such as the ion temperature gradient (ITG) mode is one such source of transport. Previous work [1, 2] used linear theory to estimate the flux of alpha particles, and recently, this linear approach was generalized to account for energy-dependent fluxes [3]. Another key assumption is that alpha particles respond only passively to microturbulence. Apart from finite-beta effects that might occur in some cases, this is a reasonable assumption, and one that we retain to make the problem computationally feasible. However, we retain the fully nonlinear turbulent dynamics: what would otherwise be a monumental task requiring tens of millions of CPU hours can now be performed in seconds on a standard workstation using a newly developed tool.

The transport equation in the low-collisionality gyrokinetic hierarchy reads [4]:

$$\frac{\partial F_\alpha}{\partial t} + \frac{1}{V'} \frac{\partial}{\partial \psi} (V' \Gamma_\psi) + \frac{1}{v^2} \frac{\partial}{\partial v} (v^2 \Gamma_v) = C[F_\alpha] + S_\alpha, \quad (1)$$

where  $F_\alpha(\psi, v)$  is the alpha particle distribution,  $V(\psi)$  is the volume of the flux surface labelled by a generalized radial coordinate  $\psi$  (here, the half-width of the flux surface at the height of the magnetic axis), and  $C$  is the test-particle collision operator for alphas colliding against deuterons, tritons, and electrons. The radial and energy fluxes can be decomposed respectively as:

$$\Gamma_\psi = -D_{\psi\psi} \frac{\partial F_\alpha}{\partial \psi} - D_{\psi v} \frac{\partial F_\alpha}{\partial v}, \quad \Gamma_v = -D_{v\psi} \frac{\partial F_\alpha}{\partial \psi} - D_{vv} \frac{\partial F_\alpha}{\partial v}. \quad (2)$$

For details on how this decomposition follows from the structure of the gyrokinetic equation, the reader is directed to Refs. [4] and [5]. It is important to note that this decomposition only depends upon the trace approximation; one is not required to ignore the turbulent drift to take advantage of Eqs. (2). Including two Helium-like species in the turbulence simulation, each with different radial gradients, one can solve for the diffusion coefficients as a simple algebraic solve at each energy. This T3CORE does by post-processing existing GS2 simulations, then solving Eq. (1) with a 2D finite-volume method. The code has been tested with a nontrivial constructed analytic solution, the results of which are shown in Fig. 1.