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ITER MEETING, MOSCOW

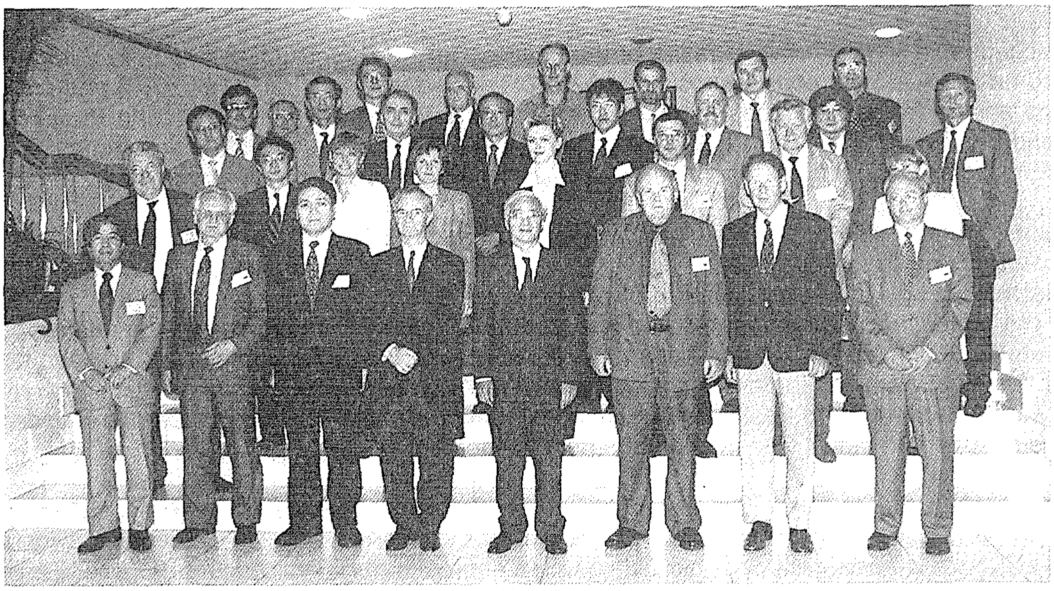
by Dr. Lev Golubchikov, ITER RF Contact Person

The present ITER Meeting was organized by the RF Party and held near Moscow, Russia, at the Ministry of the Russian Federation for Atomic Energy's Business Center, "Volynskoye-2-Atom," on June 29 and 30, 2000. The Meeting was informed about the nomination of a new Council Member from JA, Mr. Motohide Konaka. The Meeting expressed its thanks to Mr. S. Nakazawa for his valuable contributions to ITER during his term as IC Member. The Meeting also recorded its thanks to Dr. Toschi, on the occasion of his retirement, for his dedicated efforts on behalf of ITER from its very inception. The Meeting took note of the designation of Dr. Karl Lackner to succeed Dr. Toschi as EU Home Team Leader. The Meeting noted the designation of Mr. M. Drew to succeed Mr. J.P. Rager as future EU MAC Member.

The RF delegation presented a report on the progress of the Explorers at their Second Meeting held in conjunction with this ITER Meeting.

The Meeting heard the reports from the Delegations on their Parties status, noting, in particular, the favorable results of domestic assessments of the Outline Design Report for the reduced cost ITER design and the preparations being made within each Party to support the progress towards possible joint implementation of ITER. The Meeting also took a note of the Director's Status Report and his intention to inform the IC Chair and its members on his views on the coordinated technical activity and the related resources deemed necessary after the end of the EDA in July 2001 in order to prepare for the possible joint Implementation of ITER.

The Meeting congratulated the Director, JCT, and Home Teams for their successful joint work to establish a single mature design for ITER consistent with its revised objectives.



Participants in the Meeting

The Meeting accepted the Report and Advice from the MAC Meeting noting, in particular, the need to devise solutions to a number of administrative issues relating to the termination of the EDA. The Meeting noted a continuing need to secure formal approval/endorsement of applicable MAC recommendations. After discussing the Report from the Chair of the Management Advisory Committee (MAC), the Meeting accepted the Report and Advice/Advise from the latest MAC Meeting and noted a continued need to secure formal endorsement of applicable MAC recommendation.

Having noted the Director's presentation on Progress in Design and validating R&D for ITER and the presentation from the TAC Chairman, the Meeting endorsed the assessments and recommendations of the TAC Report and approved the Outline Design Report as updated following domestic assessments and as outlined to TAC, as the basis for preparation of the Final Design Report.

The Meeting asked TAC to review the draft Final Design Report, to be submitted by the Director by the end of the year, and to report to the Council at its next Meeting. The cost analysis will be reviewed through an ad hoc group involving the Home Teams and industry upon invitation from the Director.

The Meeting shared the view that it is now opportune to encourage the industries in the ITER Parties to conduct under their own auspices the dialogue initiated at the San Diego and Tokyo ITER Industry Liaison Meetings. It is recommended that the 3rd Meeting should be held in Toronto in November this year.

Having noted the input from the EU delegation on work done in Canada on public identification of ITER, the Meeting emphasized the importance of promoting public acceptance of ITER in all Parties and the value of using professional expertise in this area. The Meeting invited the Parties to review and exchange comment on public identification of ITER, including the meaning of "ITER" acronym for the future and asked the CPs to facilitate this exchange.

The Meeting took note of the CPs' Report and approved their further tasks. After considering several proposals and discussion, the Meeting agreed not to modify the ITER EDA logo and to retain the "name" ITER-FEAT for the device for the remaining period of EDA.

Initiated by the EU Party, the Meeting decided to hold the next IC Meeting in Toronto (Canada) in February – March 2001. The exact time of the next ITER meeting is to be confirmed later.

STATUS OF THE ITER EDA

by Dr. R. Aymar, ITER Director

This article summarizes progress made in the ITER Engineering Design Activities in the period between the ITER Meeting in Tokyo (January 2000) and June 2000.

Overview

Following acceptance at the Tokyo Meeting of the Outline Design Report (ODR), technical work in the EDA has focused on resolving the open issues from the ODR, including points raised by TAC, and on responding to questions arising from the Parties' domestic assessments of the ODR. Progress in this area has now been outlined in a report to TAC. A companion paper to TAC discusses the R&D programme in support of the new ITER design, including both pertinent results achieved and priorities for further work.

A key feature of current work is the preparation of "procurement packages" as the basis for detailed industrial costing studies during the second half of 2000, with the objective of generating a complete estimate of the costs of the new design to be incorporated in a draft Final Design Report around the turn of the year. As previously, the project cost estimates will be expressed in IUA, with the emphasis on the relative costs of the different systems and on comparative assessment of physical processes and unit costs, so as to allow proper collation of the input from all Parties. For this reason, the Home Teams are asked each to achieve broad coverage of ITER systems and to stress to their industrial participants the importance of transparency in the documentation supporting their presentation of results of the cost studies.

In the area of Safety, the JA Party has designated a new Safety Contact Person as the focus for information interaction on Safety/Regulatory matters. The EU has established an ITER Licensing Working Group charged to elaborate a basis for a possible EU common approach to ITER licensing. The RF Party has been invited also to nominate a Contact Person so that all Parties will be able to interact informally on progress in this vital area for the successful implementation of ITER.

Since the Tokyo meeting, the CS Model Coil facility at Naka has come into full operation. The test programme for the model coil is proceeding very well with results to date that confirm the expected behaviour. All concerned in bringing this complex international project to successful fruition can be justly proud of their joint achievement.

As requested, the Director has assisted the exploration process, in particular providing information on co-ordinated technical activities towards a start of possible future ITER construction.

Termination of the EDA

Protocol 2 of the EDA Agreement requires the Council, assisted by the Director, to provide for a timely and co-ordinated termination of the work to be carried out under the Agreement and to make proposals for actions as appropriate. For the sake of such planning it is assumed that the Parties will be aiming to progress, through Explorations and Negotiations, towards possible joint implementation of ITER, following the lines of the SWG-P2 report.

Against this background, at the end of the EDA extension period, the Parties will have at their disposal technical information necessary for future decisions on construction of ITER. Technical activities will, however, still be necessary in support of the preparations for possible joint implementation, for instance in adapting the design to specific sites offered, in safety and environmental analyses to prepare for licence applications, in collating and interpreting latest fusion physics and technology R&D results in anticipation of possible future construction, operation and exploitation and in preparing for procurement actions.

It is presumed that the Parties will need to maintain collective, first hand involvement in the definition and execution of technical activities that affect the nature of the device that they envisage to implement jointly.

In planning such activities and their possible framework, it will be essential to ensure the coherence of the Project following the dissolution of the framework for joint action that the ITER EDA Agreement provides. This implies providing for co-ordination of the Parties' technical activities, so that the design integrity and configuration control are maintained, and that the evolution of cost/schedule and safety/environment matters are seen to proceed satisfactorily from the perspective of the Parties collectively.

In addition, there should be some coherence in the overall evolution of management structures towards a future project configuration that is oriented towards joint construction, for instance, in relation to the Parties' necessary preparations of their respective procurement organizations and their interfaces to overall project management.

For the efficiency and effectiveness of both the co-ordinated technical work and of the organizational preparations, it will be most important to use the accumulated expertise and effective operational networks that have evolved in the Project to date. To this end there should be a smooth transition from the current EDA configuration to the joint implementation structure. An appropriate framework enabling such a transition should be developed to come into operation with effect from July 2001.

Joint Central Team and Support

The status of the Team at the beginning of June 2000 is summarized in the table below. There has been an overall fall of eight in JCT staff on site in all categories. Eight EC members have left the Team. The other Parties have each matched departures to new arrivals. Three further RF Team members are expected to arrive in the near future; one is expected to leave.

JCT - Status by Joint Work Site and Party at 1 June 2000

Garching	Naka		EU	JA	RF		Total
46[1]	50[1,2]		38[1]	33	25[2]		96[1,2]

1 includes three Canadians provided through the Canadian association with the EU Party
2 three additional RF members are due to arrive shortly; one more is due to depart.

The JCT numbers have been supplemented by VHTPs (~3 - 4 PPY from RF and 5 - 6 PPY from EU) and other temporary attachments to the JCT.

Task Assignments

The following tables summarize the status of R&D and Design Task Agreements. The first one covers the number of Task Agreements over the entire period of the ITER EDA. The second table summarizes the cumulative total values of Task Agreements concluded to date.

Summary of Task Agreements (cumulative)

TA Status	R&D Number	Design Number
Task Agreements committed (EU, JA, RF)	620	540
Task Agreements completed or to be completed	480	426
Task Agreements on-going	140	114
US (to 7/99)	*173*	*162*

Task Agreements Summary per Party

PARTY	R&D (IUA)	Design (PPY)
EU	222,366	295.52
Japan	219,360	267.98
Russia	95,013	231.70
US(to 7/99)	*108,023*	*170.71*
Total	644,762	965.91

ITER Physics

The Physics Basis was published at the end of 1999 as a special edition of "Nuclear Fusion", the costs of which were shared equally among the four original Parties. In addition, a special reprint of the overview chapter was produced for wider circulation.

The seven ITER Physics Experts Groups, with their modified titles and charges, are now in full operation and the arrangements for interaction with US fusion scientists on generic issues of tokamak physics are proceeding smoothly. A new framework for continued joint work on tokamak physics databases is being developed.

The priorities for physics research in 2000 as set by the ITER Physics Committee are set out in the following table. The main objectives are to strengthen further the physics basis for the inductive Q=10 operating scenario and to explore further and clarify scenarios for new modes of operation that could be used to approach steady-state operation.

Urgent (bold) and High Priority Physics Research Areas

RESEARCH AREAS	ISSUES
Finite-β effects	**Tolerable ELMs (dW/W<2%) with good confinement alternate to type-I ELMs** (e.g. type II, type III + core confinement) **Stabilization of neoclassical islands** and recovery of β
Plasma termination and halo currents	**Runaway electron currents:** production and **quenching, e.g. at low safety factor**
Sol and Divertor	Achievement of high n_{sep} and relation of $n_{sep}/<n_e>$ in ELMy H-modes Carbon chemical sputtering and deuterium retention/cleaning methods
Diagnostics	Determine requirements for q(r) and assess possible methods that can be applied to ITER Determine life-time of plasma facing mirrors and optical elements (incl. those in divertor) Reassessment of measurement requirements in divertor region + recommendation of diagnostic techniques
Core confinement	Non-dimensional scaling and identity experiments; effect of finite β and flow shear Determine dependence of τ_E upon shaping, density peaking, etc.
Internal transport barrier properties	ITB power thresholds vs n, B. q, Te/Ti, V rotation etc. for strong reversed shear (q_{min}>3), moderate reversed shear (q_{min}>2), and weak shear (q_{min}>1).
H-mode power threshold	H-mode accessibility in ITER-FEAT, data scatter
Density limit physics	Confinement degradation onset density; its dependence on aspect ratio, shape and neutral source
Pedestal physics	Scaling of pedestal properties and ELMs Effects of plasma shape on pedestal and ELMs

Urgent: Essential to confirm the feasibility of the inductive Q=10 scenario for the draft Final Design Report of ITER-FEAT at the end of 2000

High: Information valuable for design of ITER-FEAT, especially for establishing a scenario for steady-state operation of ITER-FEAT

EXPERT GROUP WORKSHOP ON TRANSPORT AND INTERNAL BARRIER PHYSICS, CONFINEMENT DATABASE AND MODELLING AND EDGE AND PEDESTAL PHYSICS, AND IEA WORKSHOP ON TRANSPORT BARRIERS AT EDGE AND CORE

by Dr. J.G. Cordey, JET; Dr. G. Janeschitz, ITER JCT, Garching; Dr. Y. Kamada, JAERI, Japan; Dr. V. Mukhovatov, ITER JCT, Naka; Dr. T. Takizuka, JAERI, Japan; and Prof. M. Wakatani, Kyoto University

A combined workshop of Transport and Internal Barrier Physics Expert Group, Confinement Database and Modelling Expert Group, and Edge and Pedestal Physics Expert Group was held in Naka, Japan from 28-30 March 2000. This combined meeting took place in association with the IEA Workshop on Transport Barriers at Edge and Core, organized by JAERI, on 27-30 March, based on the Implementation Agreement on Co-operation among the Three Large Tokamak Facilities. This note summarises the results of both Workshops.

Seven plenary sessions of the Workshops were devoted to generic tokamak issues of (1) Internal Transport Barrier (ITB), (2) Interaction between Pedestal & Core, (3) Alternative Regimes, (4) Transport Barriers & Modelling, (5) Pedestal & Modelling, (6) ITB Database, and (7) Summaries of above Sessions. The ITER Expert Groups held a plenary session on ITER Predictions. There were also parallel sessions of the individual Expert Groups.

More than 50 talks were devoted to experiments (JET, JT-60U, ASDEX-Upgrade, JFT-2M, TEXTOR-94, TCV, TUMAN-3M, START, and LHD), database (DB) analyses, theoretical models and simulations. Creation of the International ITB Database was one of the main items discussed at the Workshops. Modelling and analysis for of the existing databases (H-mode Confinement DB, Threshold DB, Profile DB, and Pedestal DB) was carried out, and international co-operation for their extension was continued.

Internal Transport Barriers
Results from JT-60U (T.Fukuda), JET (V.Parail), and ASDEX Upgrade (A.Peeters) presented demonstrate a steady progress in increasing the duration of high performance phase of discharges with ITBs and ELMy H-mode edge. In particular, $\beta_N H_{89P} = 7.2$ was sustained for $40\tau_E$ and $2.5\tau_R$ in ASDEX Upgrade, and $\beta_N H_{89P} \sim 7$, with full plasma current driven non-inductively, was sustained for > $5\tau_E$ in JT-60U. Progress has also been achieved in characterizing the conditions for ITB formation although the results from different tokamaks are not yet always consistent with each other. According to JT-60U data, the ITB power threshold in the high-β_p mode (weak central shear) is a strong function of plasma density ($P_{thr} \propto n^{1.75}$) with no or weak dependence on toroidal magnetic field (B_T). The ITB threshold in the reversed shear (RS) configuration is lower than that in the high-β_p mode and close to the H-mode power threshold. Dependence of P_{thr} on plasma density and B_T in the RS mode is weak. By contrast, the ITB power threshold in JET 'optimized shear' mode exhibits approximately linear growth with B_T and is approximately 2 times higher than the H-mode power threshold. The P_{thr} value in JET varies with target q profile, and formation of ITBs appears to be linked to the integer q surface. Comparison of deuterium and DT shots did not reveal any isotope effect on ITB properties. JET experiments show that low hybrid (LH) wave preheating can significantly reduce the threshold power (from 12 MW to 7 MW for 2.6T shots). The power required for obtaining ERS (enhanced reversed shear) mode in TFTR is a strong function of toroidal field ($P_{thr} \propto B^{\alpha}$ with α = 1-2). The threshold power is higher when heating by the tritium neutral beam than when heating by the deuterium beam. The ITB power threshold with counter-NBI was shown in DIII-D to be much higher (more than 3 times) than that for the case of co-NBI. No evidence of power threshold for the formation of an electron transport barrier was observed in TORE Supra with LH heating. Most machines reported that central power deposition is favorable for ITB formation. Two ITB layers were identified in JET, suggesting that these two layers were generated by different mechanisms. The inner ITB seems to be associated with the negative shear region while the outer ITB could be associated with strong plasma rotation. A preliminary scaling characterizing the energy confinement in RS discharges with ITBs was suggested on the basis of the JT-60U database. Plasma with $T_e \simeq T_i$ (typical for reactor conditions) was obtained without any (JT-60U) or with minor increase (ASDEX Upgrade) in ion transport within the ITB. In JT-60U, EC heating at the plasma centre revealed that the heat pulse propagates rapidly inside the ITB radius but stops at the ITB. An abrupt decrease of electron transport in a wide radial region (~ 0.4a) was found in JT-60U for the 'weak' ITBs at both negative and positive central shear, while the decrease was more localized (~ 0.2a) in the 'strong' ITB case (S.Neudatchin).

It was agreed to organise the ITB Working Group and create an International ITB Database. The goal is to improve the accuracy of extrapolations of ITB characteristics to a reactor-scale device. The main near-term issues are scaling for the ITB threshold power and confinement scaling for plasmas with ITBs. The database management will be shared between JT-60U (Global DB) and JET (Profile DB). The goal is to prepare a paper for the EPS-2001 Conference. A review paper on ITBs will be written by December 24, 2000.

H-mode Global Confinement Database
A current working version of the Global H-mode Confinement Database, DB3v8, contains 9137 data observations from 14 Tokamaks (including START, a new machine in the DB). Confinement time observed in START is higher than the prediction by ITERH-98P(y) but lower than the prediction by ITERH-98(y,2). Analysis has shown additional dependence of confinement on q_{95}/q_{cyl} (O.Kardaun). Also, the database seems to exhibit an interaction between density and triangularity in confinement scaling. However, the results are preliminary and depending on the position of C-Mod. New data from START, ASDEX Upgrade, JET, T-10, JT-60U, TCV and DIII-D will be submitted to the DB in June 2000. Fitting DB3v8 with a 2 term (pedestal and core) physics model assuming the pedestal width $\Delta \sim \rho_{i,th}$ or $\Delta \sim (\rho_{i,th}a)^{1/2}$ gave offset non-linear confinement scalings with RMSE of 15.5% and 15.1%, respectively (J.G.Cordey). Reducing the divertor density relative to the separatrix density appears to play a role in these experiments. Analysis of TCV H-mode data with different plasma elongation ($\kappa \sim$ 1.5-2.2) suggests that the κ dependence in power law global confinement scalings can be due to geometry alone, rather than to an intrinsic dependence of diffusivity on elongation (H.Weisen). The $H_{98(y,2)}$ factor in the DB3v5 is near 1 at heating power P_{heat} close to the H-mode power threshold P_{L-H} and even below it (due to hysteresis) (A.Chudnovskiy) although JET experiments show that P_{heat} _ (2-2.5)P_{L-H} is required to obtain an H-mode with Type I ELMs and good confinement (E.Righi). The DB Working Group will contribute to the 18th IAEA Fusion Energy Conference with a database analysis paper, to be presented by O.Kardaun, with emphasis on log non-linear scalings. Concurrently, an overview paper describing the 'final' version of the DB3 confinement database is planned to be submitted to *Nuclear Fusion* this year.

H-mode Threshold Database

The scattering of the power threshold in the H-mode Threshold and possible ways to reduce it have been discussed (F.Ryter). The scatter in JET arises partially from time slices that were not chosen adequately and will be corrected in near future. Different divertors also contribute to the overall scatter in this device (E.Righi). In TCV a strong increase of the power threshold at low values of q_{95}, as observed already in other devices, seems to produce a strong apparent scatter (Y. Martin). The different density dependencies in different machines also contribute to the scatter in simple power regressions made with the combined database. This effect will be taken into account by applying interaction models in the analysis. Such investigations, based on regression as well as discriminant analysis, are foreseen for the contribution to the paper submitted to the 18th IAEA Fusion Energy Conference.

Transport Barrier Modelling

The results of simulations of the L-H transition using the Shaing orbit-loss model have been presented and compared with the global H-mode threshold scaling (R.Hiwatari). Results of non-linear simulation of the non-resonant negative-sheared slab ETG mode using the gyrokinetic finite element PIC code were presented (M.Wakatani). Stabilisation of ETG turbulence by zonal flows was demonstrated. The saturation level of χ_e~$0.4m^2/s$ which was obtained is comparable with experimental data. 3D fluid simulations of ITG turbulence demonstrated a creation of ITB in reversed sear configuration that seems to be associated with a lack of overlapping between adjacent resonance modes (X.Garbet). Increases in ion thermal transport due to collisional damping of zonal flows was shown in gyrokinetic simulations (T.Hahm). Measurements of zonal flows are still lacking. Results of simulations of transport barrier dynamics with the TBD code were reported. A resume of the background of the Cyclone Project and recent progress in the IFS-PPPL and Weiland's models has been reported (J.Weiland). The importance of taking account of neutral atoms on electron temperature evolution in the plasma core after L-H transition was demonstrated by 1D transport modelling (V.Leonov).

Edge and Pedestal Database

The Scalar Pedestal Database has been made public. The Profile Pedestal Database now contains JET and JT-60U data. A comparison of pedestal width data is being made between JT-60U and DIII-D, and results will be presented at the EPS-2000 Conference (T.Hatae). HIBP (heavy ion beam probe) measurements in JFT-2M clearly showed a two-step drop in the edge electrostatic potential at the L- to H-mode transition showing different time-scales (10-100 μs and 200-500 μs) (Y.Miura). New scaling for the pedestal energy content of the form $W_{ped} \propto I(T_{ped}M)^{1/2}\kappa^3\delta^{-0.05}$ has been suggested on the basis of JET data (D.McDonald, et al., presented by J.G.Cordey). Estimations of pedestal temperature using the ballooning limit for the edge pressure gradient and the pedestal width predicted by available theoretical and empirical models give T_{ped} in ITER-FEAT in the range of 1-3.5 keV (M.Sugihara). Comparison of predicted pedestal widths with those in the Pedestal Database is not yet decisive in choosing preferential models. A new model for Type III ELMs based on non-linear interchange resistive instability driven by magnetic stochasticity was presented (Yu.Igitkhanov). The model reproduces some important features of Type III ELMs observed in experiments. Experiments on TUMAN-3M with current ramp up and down and with minor radius magnetic compression indicate the important role of the non-ambipolar radial drift of trapped particles in the generation of the L-H transition (S.Lebedev).

Interaction between Edge and Core

Experimental results presented from JT-60U (H.Urano, D.Mikkelsen) and ASDEX Upgrade (F.Ryter) show temperature profile stiffness in positive shear H-modes except for low-density discharges. ASDEX Upgrade results extend observations of stiffness down to the scrape-off layer (SOL), establishing a link between SOL conditions and overall plasma performance. Both devices report that the confinement degradation at high density can be overcome by operation at increased triangularity. The physics-based transport model describing qualitatively stiff/non-stiff profile behaviour in JET, ASDEX Upgrade, DIII-D and JT-60U has been presented (G.Janeschitz). Studies of energy confinement in JET ELMy H-modes with varying elongation and triangularity did not show a confinement improvement with triangularity at high density (D.McDonald, et al., presented by J.G.Cordey), in apparent contradiction to JT-60U and ASDEX Upgrade data and earlier JET results.

Alternative Regimes

A serious concern that divertor erosion in a reactor-scale device associated with large (Type I) ELMs could be unacceptably high motivated the search for alternative regimes. Three alternative regimes with good confinement but without Type I ELMs are now under study. They include the EDA (Enhanced D_a) mode observed in C-Mod (A.Hubbard) and regimes with "grassy" and Type-II ELMs in JT-60U (Y.Kamada), DIII-D and recently in ASDEX Upgrade (F.Ryter). These regimes have many features in common. In particular, conditions for accessing them are similar, i.e., high triangularity (d_{sep} > 0.35) and high q (q_{95} > 4). In JT-60U and ASDEX Upgrade the edge pressure gradients in discharges with small ELMs exceed those with type I ELMs, therefore the access to the second stability regime for ballooning modes in both cases seems to be of importance. Further comparisons of these regimes are planned. In recent experiments on TEXTOR concentrating on optimising the rate of gas puff in the RI (Radiatively Improved) mode, values of t_E comparable to those in ELM-free H-modes (H_{H93}~1) at plasma densities n ~ 1.4n_{GW} for quasi-stationary time interval (~ 20 t_E) have been achieved (J.Ongena). Similar experiments on DIII-D showed that core density fluctuations are reduced in RI mode. There is a good agreement with theory predicting suppression of the ITG turbulence at these conditions. It was decided at the Workshop that a separate database for "alternative regimes" is not necessary, since most of the relevant variables are the same as for the usual H-mode.

Transport Modelling

The focus of the Modelling Working Group activity during last 6 months was the *Nuclear Fusion* paper describing the Profile Database; the manuscript was submitted. Two proposals for transferring the Profile Database into a more widely used format, i.e., MDSplus and the JET database systems were presented and discussed.

ITER Predictions

Results of a simplified analysis of the probability for ITER-FEAT to attain a power amplification factor Q $\geq$ 10, based on the interval estimate of the confinement time and taking account of operational limits, have been presented and discussed. In a report presented by Y.Murakami, the maximised conditional probability of achieving Q > 10 was estimated as 75% for 15 MA operation and 90% for 17 MA operation. In a similar, independent, analysis somewhat lower values of the probability have been obtained by O.Kardaun with slightly different assumptions on impurity contents. The point prediction for the energy confinement time in ITER-FEAT using I = 15 MA, n/n_{GW} = 0.85, P_{aux} = 40 MW is 3.66 s with 2s log-linear interval of ±20% and 2s log non-linear interval (2.56 s, 5.12 s). Preliminary results of predictive simulations of ITER-FEAT performance using the latest version of Weiland's model show a strong dependence of Q on plasma density, edge pedestal temperature and Z_{eff} (J.Weiland). O.Mitarai presented results of simulations of current ramp-up in ITER-FEAT partially assisted by the magnetic flux from the equilibrium coils.

The next round of ITER Expert Group Meetings will be held during the period 11-13 October,after the 18th IAEA Fusion Energy Conference. The Pedestal Group, MHD Group, and Divertor Group hold a combined Meeting in Garching, and the two Confinement Groups and Energetic Particle Group will meet in Frascati.

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