

Charter of the International Tokamak Physics Activity (ITPA)

Agreed principles for conducting the International Tokamak Physics Activity (ITPA)

Approved by the ITPA Coordinating Committee October 18, 2006, Chengdu, China

Amended by the ITPA Coordinating Committee January 8, 2008

Agreed with the ITER-IO February 25, 2008

1.0 Preamble

The International Tokamak Physics Activity (ITPA) provides a framework for internationally coordinated fusion research activities. The ITPA continues the tokamak physics R&D activities that have been conducted on an international level for many years resulting in the achievement of a broad physics basis essential for the ITER design and useful for all fusion programs and for progress toward fusion energy generally.

The ITPA has been operating under the auspices of the IAEA International Fusion Research Council since its inception in July 2001. The ITPA will from February 25, 2008 operate under the auspices of ITER in order to provide the framework for coordinated physics research activities proposed by the ITER-IO, as approved at the second meeting of the ITER Interim Council July, 2007, and as invited by the ITER Director General in his letter of November 20, 2007 to the ITPA Coordinating Committee. These co-ordinated physics research activities will help develop the physics basis for ITER operation, integrate the expertise of the international fusion community into ITER, provide a pathway to exploit the capabilities of existing fusion facilities and programmes in support of ITER, and integrate results of the fusion programmes of the ITER Members into planning of ITER operation. The ITPA has an advisory role with respect to the ITER-IO. The ITPA will provide support to ITER in the fulfillment of its mission by helping to create a common international research programme organized around scientific issues and will facilitate the participation of the ITER Members in the ITER scientific programme. The integration of fusion researchers from the ITER Members into the ITER physics research programme will help ITER become a world-class scientific research facility for the benefit of the international fusion community.

2.0. Internationally Coordinated Physics Research Activities.

Each Participant to the ITPA agrees to support in the following ways the ITPA's efforts to provide a framework for internationally coordinated physics research activities and to provide support to the ITER Organization and international tokamak research generally:

- Provision of validated experimental data according to agreed formats;
- Presentation of analyzed results of experiments to advance understanding of fusion plasma physics;

- Organization, management, and updating of qualified databases;
- Development of theoretical models and simulation results to explain and reproduce experimental results;
- Fostering of joint experiments among the world's tokamak devices;
- Demonstration of experimental techniques in such areas as wall conditioning/cleaning, plasma control, etc. which can be exploited to optimize ITER's performance;
- Investigation and documentation of plasma scenarios suitable for exploitation in ITER;
- Exploration of ITER's potential as a burning plasma experiment by modelling and simulation experiments in present devices;
- Identification and resolution of key heating and current drive, diagnostics, and fuelling issues which might arise in plasma control and analysis of ITER plasmas;
- Creating annually a list of High Priority R&D Issues which can lead to definition of elements of a research program and which meet the needs of ITER and advance international research in tokamaks generally;
- Undertaking scientific studies agreed with the ITER-IO as being of high importance for the pursuit of the ITER project goals;
- Supporting emerging research in new relevant areas of physics in the future.

3.0 ITPA Participants

The ITPA operates under the auspices of ITER. The Participants in the ITPA are the Members of ITER. ¹.

Each Participant in the ITPA is expected to:

- Support the purposes, processes, and infrastructure of the ITPA as described above.
- Host the meetings of the Coordinating Committee and the Topical Physics Groups as required. No participation fee shall be charged. The host Participant shall provide support of the meeting in terms of services such as conference room, computers with internet connection, secretarial support and other meeting arrangements.

4.0 Organizational Structure

The organizational structure of the ITPA consists of one Coordinating Committee (CC) and several Topical Physics Groups.

4.1 The role of the ITPA Coordinating Committee is to oversee the Topical Physics Groups in conducting their tasks as described above and to interface the ITPA to the ITER Organization (IO). It is composed of three representatives from each

¹ The ITER Director General may invite additional participation in the ITPA.

Participant and the ITER Organization. One representative from each Participant is designated as the Contact Person from that Participant. The ITER-IO also designates one of its three representatives as a Contact Person. The Chairman of the Coordinating Committee is selected from the Committee members by consensus of the Contact Persons. The Chairman will have a three year term. The ITER Organization will provide the Co-Chair from its three representatives and general administrative support of the ITPA. The Coordinating Committee holds at least one meeting per year.

- 4.2 The Coordinating Committee determines the number and subject of the Topical Physics Groups, seeking to facilitate the most effective and efficient interaction with the ITER Organization directly at the Topical Group level. Each Group should coordinate tokamak physics research in its specific subject area, analyze the database, carry out modeling, develop materials for its report to the Coordinating Committee, and generally support the ITER Organization as needed.
- 4.3 Every three years, the Coordinating Committee selects the Deputy-Chairs of the Topical Physics Groups from the Participants. The Deputy-Chairs will automatically become Chairs three years later. Chairs will have a three year term. Chairs and Deputy-Chairs should be acknowledged worldwide as research leaders in the field of their Topical Group. These provisions will assure continuity of Topical Group activities and periodic change of Topical Group leadership and provide the opportunity for balance of Topical Group leadership across the ITPA Participants. In addition to the Chair and Deputy-chairs, each group will have an ITER Deputy-Chair representing the ITER Organization and appointed by the ITER Organization to facilitate a close working interface with the ITER Organization and the administrative support of the ITPA by the ITER Organization. The ITPA Coordinating Committee will deal with any necessary changes to this procedure
- 4.4 Each Topical Group consists of 2-7 scientists per Participant, named by each Participant. One scientist will be identified by the Participant as Lead for the Participant. The Groups may invite the participation of additional scientists from and nominated by the Participants.
- 4.5 The ITPA Coordinating Committee and the Topical Groups (with the approval of the ITPA Coordinating Committee) may form Working Groups that cross Topical Group boundaries and are for the performance of a specific task with a well defined timescale and deliverables.
- 4.6 The ITPA Coordinating Committee may also confer observer status on international fusion research communities that petition the ITPA Coordinating Committee for such status. The stellarator community currently has such status and is entitled to place one representative on each ITPA Topical Group.

5.0 Meetings and Reporting

Each Topical Group holds an average of two meetings a year. Meeting locations and dates must be submitted by the Topical Groups for approval by the Contact Persons for the Coordinating Committee, with a decision to be made within two weeks after the submission of the proposal by the Topical Group. Topical Group Chairs and Deputy Chairs should inform the ITPA Contact Persons approximately three months in advance of Topical Group meetings of the details of the meeting arrangements together with any specific requests for additional participants. The Group should issue to the Coordinating Committee a succinct summary of each meeting promptly within two weeks after the Group meeting.

Group activities should be reported at each meeting of the Coordinating Committee and progress reports on key issues should be made in a timely manner. The annual reports of the Topical Groups will be submitted by the Coordinating Committee to the ITER Director General.

Groups are encouraged to make their work available to the broader fusion community in a timely manner.

6.0 Legal Basis

The legal basis for the ITPA is the bilateral and multilateral agreements for collaboration in fusion research existing between the ITER Members

The ITPA has been invited by the ITER Director General to operate under the auspices of ITER. This arrangement will be reviewed every two years.