ITPA Topical Group on MHD, Control, and Disruptions

- **Scope:**
  - **to provide the experimental and theoretical basis and recommendations for next step burning fusion devices in the field of**
    - **ß limiting MHD instabilities and their active control,**
    - **edge MHD stability and tolerable ELMs**
    - **disruptions (physics, prediction, avoidance and mitigation)**
    - **plasma control, including performance, shape and position control**
- **U.S. members:**

  Ted Strait
  Steve Jardin
  Bob Granetz
  Jerry Navratil
  John Wesley
  Ed Lazarus
  (Chris Hegna)
  (Eric Fredrickson)

ITPA Topical Group on MHD, Control, and Disruptions

- **Formation of ITPA Electronic Working Group on Control**
  - Focus on issues of plasma control in burning plasma experiments, including needs for diagnostics and actuators
  - Coordinator: Y. Gribov <gribovy@itergps.naka.jaeri.go.jp>

- **Initiation of new Disruption Database**
  - To include equilibria preceding disruption, disruption dynamics, disruption effects, time and space-dependent data
  - Coordinator: J. Wesley <wesley@fusion.gat.com>
  - Poster by A. Hyatt (QP1.039)

- **Tokamak Physics Basis for Burning Plasma**
  - Update of ITER Physics Basis (Nucl. Fusion 39 No. 12, Dec. 1999)

Tokamak Physics Basis for Burning Plasma

- **Purpose:**
  - ***formal documentation of the developing understanding of plasmas under thermonuclear condition, together with the attendant uncertainties***
  - ***statement to the wider scientific community that our understanding has developed to the point where such a burning plasma experiment is justified***
- **Chapter 3. MHD Stability, Operational Limits and Disruptions**
  - **Task group chair: Otto Gruber**
  - **Length: 90 pages A4 (IPB was 254 pages)**
- **Chapter 8. Plasma Operation and Control**
  - **Task group chair: Yuri Gribov**
  - **Length: 30 pages A4 (IPB was 73 pages)**
- **Schedule:**
  - **Dec. 31, 2003: manuscripts due to task group chairs**
  - **Feb. 2004: discuss at ITPA-MHD group meeting (Naka)**
  - **Mar. 30, 2004: manuscripts due to editors**
  - **July 31, 2004: final manuscript to Nuclear Fusion**