



EFDA

EUROPEAN FUSION DEVELOPMENT AGREEMENT

Task Force
INTEGRATED TOKAMAK MODELLING

*ITM General Meeting 2010
Lisbon, September 13-15, 2010*

IMP5: Energetic Particles

Presented by G. Vlad

Associazione Euratom-ENEA sulla Fusione, Frascati

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- WP10-ITM-IMP5-ACT1: Adaptation of IMP5 codes for use with ITM tools
 - Linear stability codes
 - **LIGKA (P. Lauber, IPP-Garching)**: under modification in order to be ported to the Gateway
 - eigenvalue solver: substitute NAG routines with SCALAPACK
 - substitute WSMP (**Watson Sparse Matrix Package**) solver for the antenna version and other NAG routines
 - **LEMAN (T. Cooper, CRPP-Lausanne)**: *see T. Copper presentation*
 - Nonlinear codes
 - **HMGC (C. Di Troia, ENEA-Frascati)**: simple interface with equilibrium CPOs to be done (Dec. 2010)
 - **HYMAGYC (G. Vlad, ENEA-Frascati)**: *see G. Vlad presentation*

- WP10-ITM-IMP5-ACT2: Benchmarking and validation of codes
 - Codes involved: LIGKA, LEMAN, (and HMGC, HYMAGYC used in linear regime)
 - benchmark cases from ITPA-Energetic particle Physics Topical Group have been chosen (thanks to ITPA) and will be made available on the Gateway for benchmarking (within Dec. 2010)

- WP10-ITM-IMP5-ACT5: Code for Alfvén Modes
 - Nonlinear analysis codes
 - HMGC (C. Di Troia, ENEA-Frascati)
 - HYMAGYC (G. Vlad, ENEA-Frascati)
 - Semi-analytical code
 - Multi-mode nonlinear evolution of plasma modes driven by energetic particles near the linear stability threshold with different collision model (S. Marczynski, IPPLM, Poland)