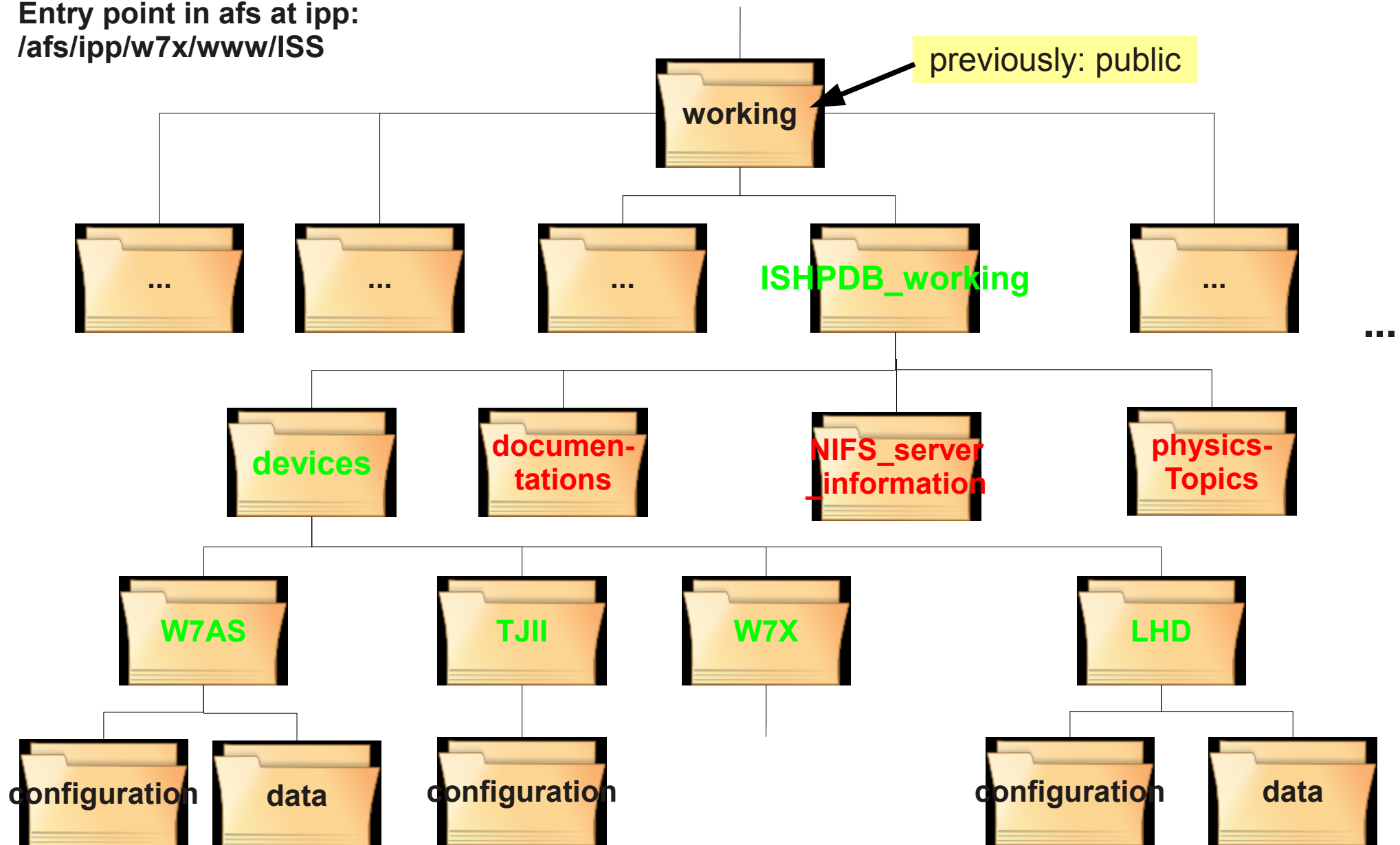


Status Equilibrium Database

J.Geiger

Current structure within ISS-directory

Entry point in afs at ipp:
/afs/ipp/w7x/www/ISS



Access to configurations



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ISHPDB Public Data

This database is intended to compare confinement, transport and various physical phenomena which may be commonly observed among several stellarator-heliotron devices. The general philosophy of the International Stellarator-Heliotron Profile Database (ISHPDB) is to collect and assess contributions for a concise documentation of stellarator-heliotron performance. ISHPDB public data consist of the published data. The data are included each physics topics. The profile data are provided in the UFILE format, which is adopted in the ITER profile database. All profile data in ISHPDB public are accessible. The configuration data are in the restricted area. Any publication from material stored on this web-site requires agreement from the collaborators.

Physics Topics

Confinement Data

Confinement data are included in ISHCDB (International Stellarator-Heliotron Confinement Database). Assessments of the energy confinement are expressed in forms of International Stellarator Scalings, ISS.

CERC

Core Electron Root Confinement (CERC).

High Beta

High beta data

Validation of Neoclassical Transport

Validation of neoclassical transport theory.

High Performance

Data in the high performance group have high nT in principle.

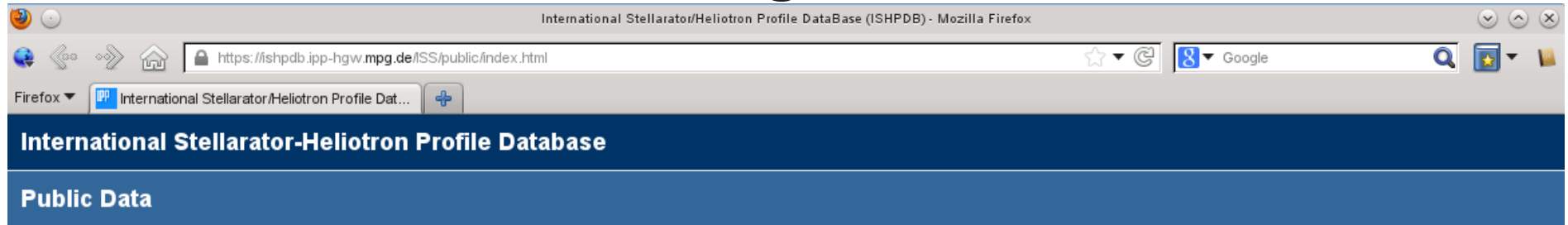
H-mode

H-mode

Edge Turbulence

Edge Turbulence

Access to configurations



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H-mode

H-mode

Edge Turbulence

Edge Turbulence

Navigate by physics topics

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CERC aka Core Electron Root Confinement

References:

M. Yokoyama et al., Nucl. Fusion., **47**, 1213 (2007).
 M. Yokoyama et al., Fusion Sci. Tech., **50**, 327 (2006).
 J. Lore et al., Physics of Plasmas **17** 056101 (2010).

Devices:

LHD
 W7-AS
 T.J-II
 HSX

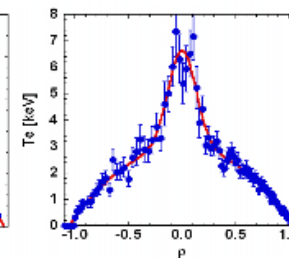
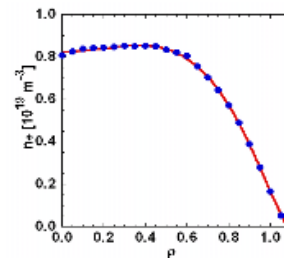
Deliverables:

- Measured n_e , T_e , T_i (if possible) and E_r (if possible) profiles as a function of ρ
- Overview of time traces
- Corresponding equilibrium data (need the discussion)

Fitting functions

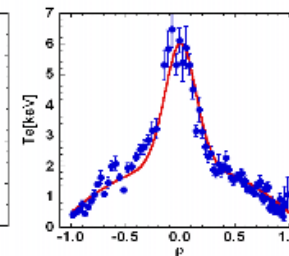
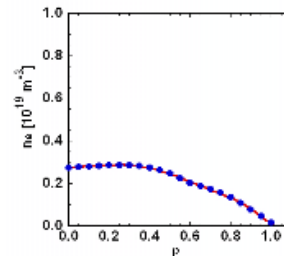
LHD CERC data

027552
 UFILE
 xml
 Confinement Data



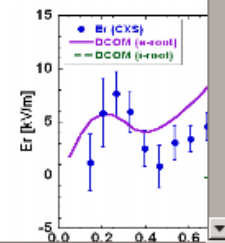
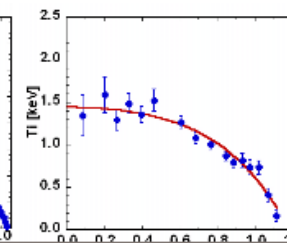
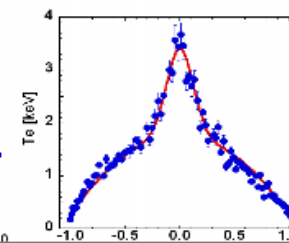
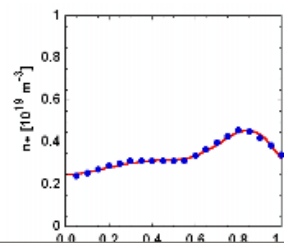
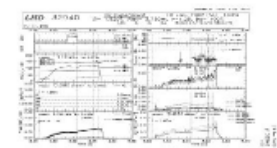
$T_i(0) = 2 \text{ keV}$ [Crystal]

028143
 UFILE
 xml
 Confinement Data



$T_i(0) = 1.1 \text{ keV}$ [Crystal]

032940
Fit Coefficients
 UFILE
 lhd_032940_002003_v0001_0d.dat
 lhd_032940_002003_v0002_0d.dat
 lhd_032940_002003_v0001_2d.dat
 lhd_032940_002003_v0002_2d.dat
 lhd_032940_002503_v0002_0d.dat
 lhd_032940_002503_v0002_2d.dat
 lhd_032940_002503_v0003_2d.dat
Configuration Data
 xml



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CERC aka Core Electron Root Confinement

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 M. Yokoyama et al., Fusion Sci. Tech., **50**, 327 (2006).
 J. Lore et al., Physics of Plasmas **17** 056101 (2010).

Devices: **LHD**

032940
Fit Coefficients
 UFILE
 lhd_032940_002003_v0001_0d.dat
 lhd_032940_002003_v0002_0d.dat
 lhd_032940_002003_v0001_2d.dat
 lhd_032940_002003_v0002_2d.dat
 lhd_032940_002503_v0002_0d.dat
 lhd_032940_002503_v0002_2d.dat
 lhd_032940_002503_v0003_2d.dat
Configuration Data
 xml

032940
Fit Coefficients
 UFILE
 lhd_032940_002003_v0001_0d.dat
 lhd_032940_002003_v0002_0d.dat
 lhd_032940_002003_v0001_2d.dat
 lhd_032940_002003_v0002_2d.dat
 lhd_032940_002503_v0002_0d.dat
 lhd_032940_002503_v0002_2d.dat
 lhd_032940_002503_v0003_2d.dat
Configuration Data
 xml

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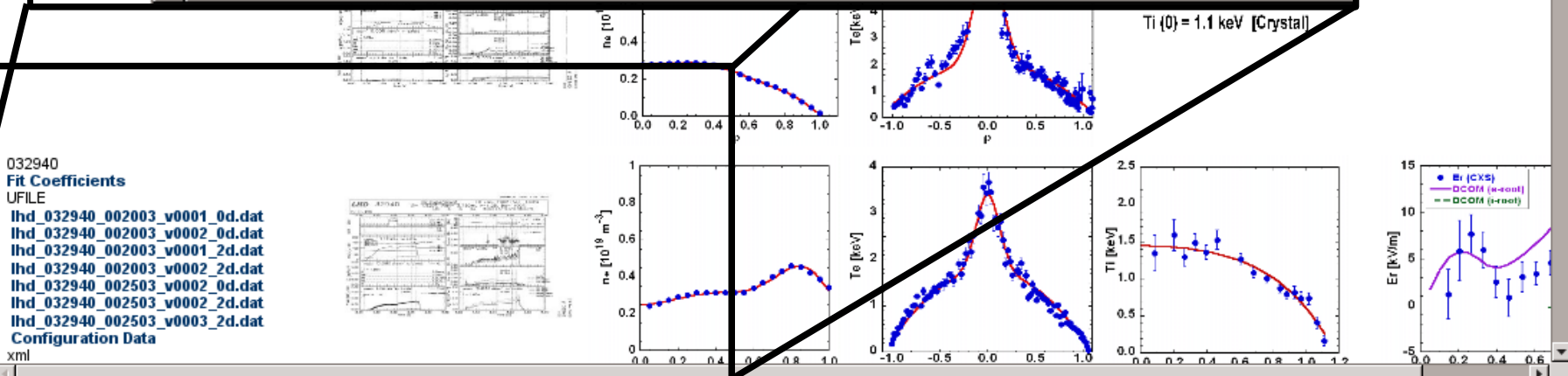
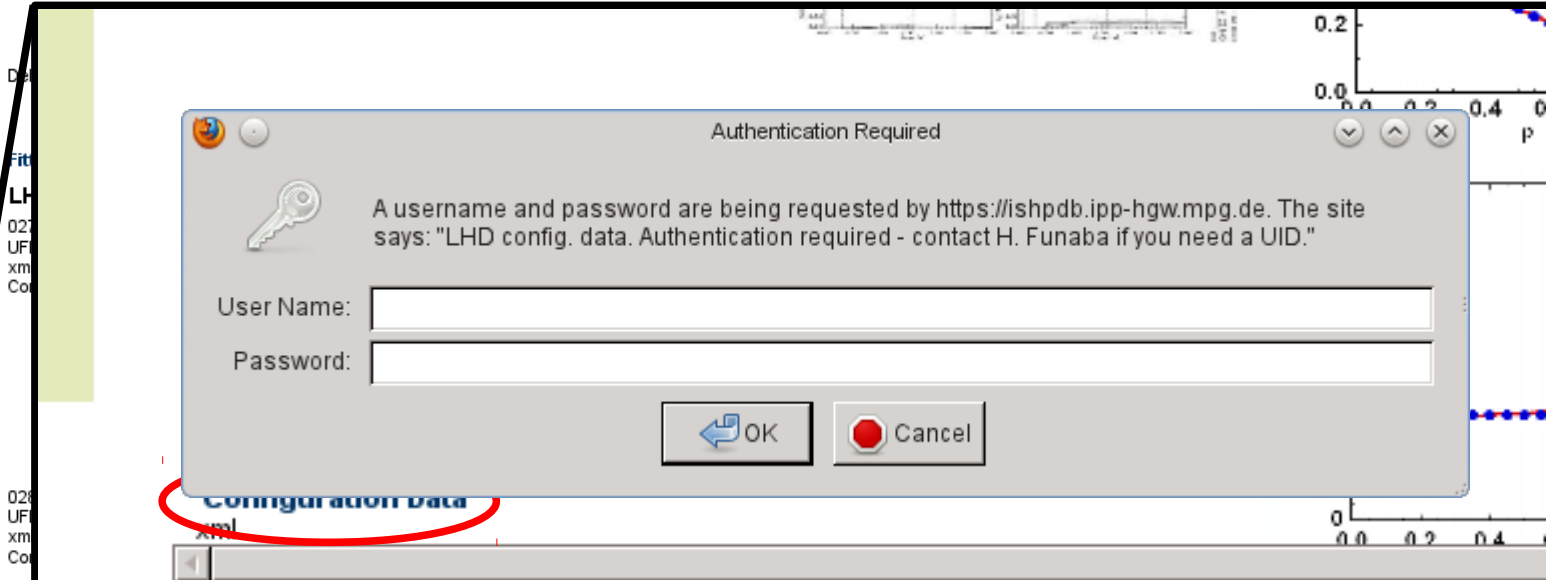
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Devices:

LHD



Access to configurations

Registration necessary : user-id + password

LHD : Masayuki Yokoyama
W7-AS: Andreas Kus
TJ-II: Juan Antonio Jimenez

International Stellarator-Heliotron Profile Database

Public Data

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Index of /ISS/working/ISHPDB_working/devices /LHD/configuration/032940_2s

<u>Name</u>	<u>Last modified</u>	<u>Size</u>	<u>Description</u>
 Parent Directory		-	
 calc_info_lhd_032940_002003.txt	03-Jun-2011 10:47	141	
 input.r375q100b000a8020_vmec	03-Jun-2011 10:47	8.7K	
 jxbout.r375q100b000a8020_vmec	03-Jun-2011 10:47	4.4M	
 mercier.r375q100b000a8020_vmec	03-Jun-2011 10:47	12K	
 threed1.r375q100b000a8020.txt	03-Jun-2011 10:47	88K	
 wout.r375q100b000a8020_vmec	03-Jun-2011 10:47	1.7M	

Apache/2.2.12 (Linux/SUSE) Server at ishpdb.ipp-hgw.mpg.de Port 443

Devices up to now (**no equilibrium data** → **mainly in turbulence investigations**):

- **AUG**
- **CHS**
- **HSX** (*2010: is also to come – no date yet (2013)*)
- **LHD** (*three cases*)
 - **CERC #032940_2s**
 - **valid. of neocl. transp. #109696_004400**
 - **high-Ti #090982_002366**
- **MAST**
- **TJII** (*four cases*)
 - **CERC #15480 & 15485**
 - **H-Mode #18998 & 19002**
- **TJ-K**
- **U-3M**
- **W7AS**
 - **high- β #51755, 54022, 54023**
 - **CERC #36712, 36908, 37015, 37389, 37390, 42752, 42778**
 - **high performance #34187, 34313, 34609**
- **WEGA**

Output-files and formats:

- minimum set of vmec-files : input, threed1, wout (ascii-format)
- TJ-II → provided as zip-archives
- W7AS → part as tar-archives
- vmec-versions:
 - LHD → 6.90
 - TJ-II → 8.46
 - W7AS → vmec9011, 6.90, 8.00, 8.46

Devices up to now (**no equilibrium data** → **mainly in turbulence investigations**):

- **AUG**
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- **WEGA**

Output-files and formats:

- minimum set of vmec-files : input, threed1, wout (ascii-format)
- TJ-II → provided as zip-archives for download
- LHD/W7AS → file access (partly structured in folders)
- vmec-versions:
 - LHD → 6.90
 - TJ-II → 8.46
 - W7AS → vmec9011, 6.90, 8.00, 8.46

Conclusions

- **Increase in number of devices (LHD, TJ-II & W7-AS (HSX?...))
and of configurations**
- **Ready to be accessed and used**
 - **Only use reveals strengths and weaknesses!**
 - **UID+password for access → A. Kus, M. Yokoyama**
- **Question:**
 - **free-boundary calculations → extracted final vmec-boundary?**
- **Thanks to all contributors and for discussions**
 - **A. Dinklage, J.A. Jimenez, A. Kus, M. Yokoyama**