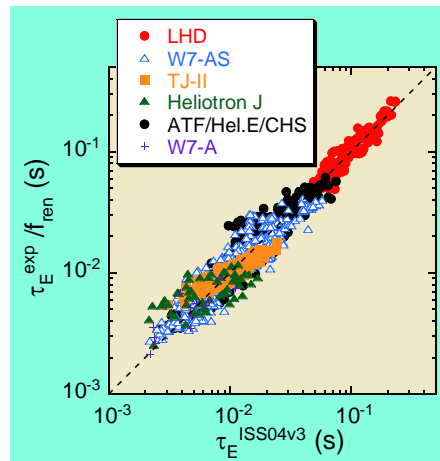
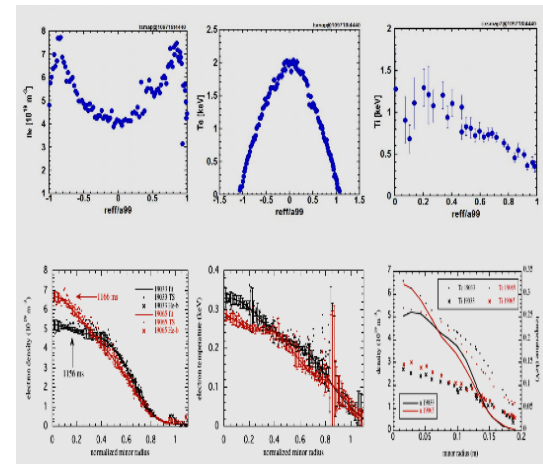


Development of TASK3D-a, and its linkage to Stellarator-Heliotron Database (ISH-DB)

M. Yokoyama (NIFS)



Confinement database (CDB)
 τ_E : energy confinement time

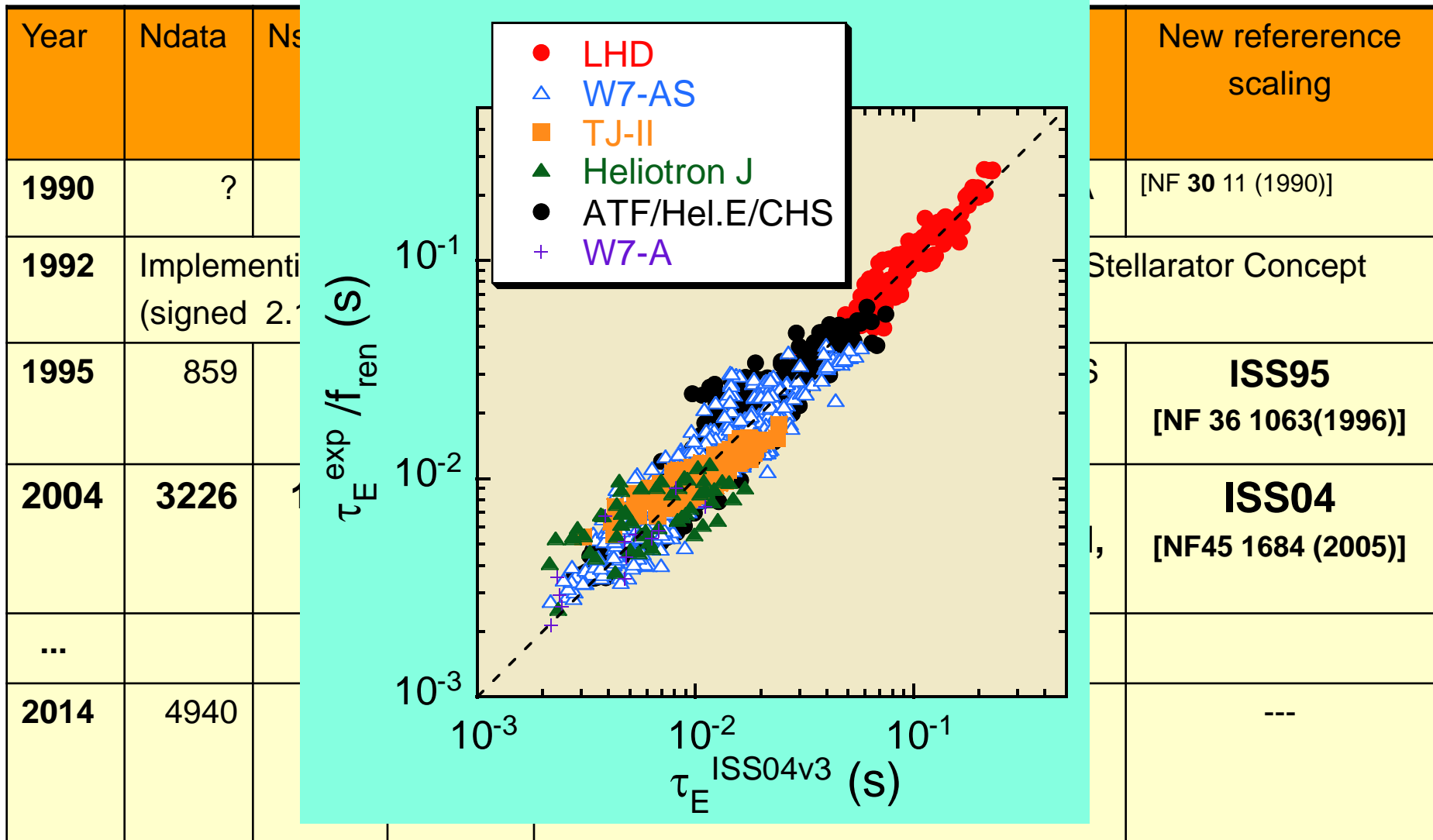


Profile database (PDB)
more physics-oriented



Integrated transport analysis suite,
TASK3D-a, for **LHD** plasmas,
as an unified data supplier

SH CDB, basis for τ_E scalings



(*1) Number of observation/devices used in scaling derivation

(*2) HSX not used in analyses (scales with dens. $\sim 10^{17}/m^3$ and ECH < 100 KW too differently)

Extension after CWGM13

- **HSX (D.Chuanbao):** “ishcdb_HSX_2014.xlsx” (16 Aug. 2014)
 - ✓ **619** entries, ECRH plasmas, Te/Ti ~ 10-30
 - ✓ Unique configuration (QSH)
- A.Kus (IPP): JMP scripts to check new confinement datasets
- F.Warmer (IPP) :
 - ✓ appointed as “interim” officer (IPP) for book-keeping
 - ✓ application of JMP to new HSX data
- A.Kus:
 - ✓ retired in Sep. 2014
 - ✓ handed over relevant JMP scripts to Felix/me in Jan. 2015
- M.Yokoyama: Preparation of LHD data based on **TASK3D-a**
 - ✓ Checked by Felix, ready to register (but not proceeded...)

PDB: current status

<https://ishpdb.ipp-hgw.mpg.de/ISHPDB/public/>

Topic	Data available from
Core Electron Root Confinement (CERC) (IAEA-FEC 2006)	HSX, LHD, TJ-II, W7-AS
High Beta	LHD, W7-AS
Transport Validation (IAEA-FEC, 2012)	LHD, TJ-II
High Performance (high $n\tau T$)	W7-AS
High Ti	LHD
H-mode	CHS, LHD, TJ-II
Edge Turbulence (M. Ramisch, Stuttgart)	AUG, HSX, MAST, TJ-K, URAGAN, W7-AS, WEGA
Flows	LHD (90493t2330)
Link to Stellarator Turbulence	(IPP theory departments)
Magnetic Configuration Data	LHD, TJ-II, W7-AS

Profiles used for IAEA-FEC 2012 [A.Dinklage et al., NF 53 (2013) 063022.]

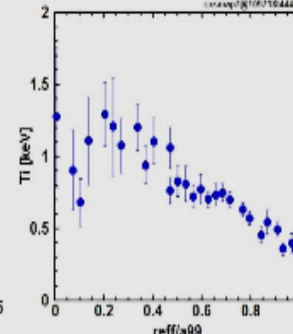
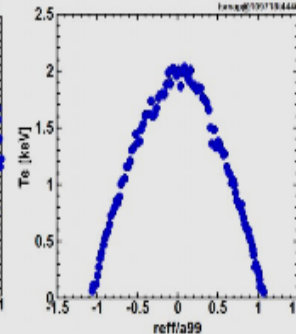
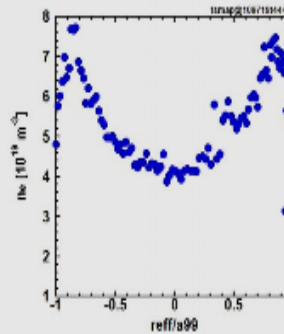
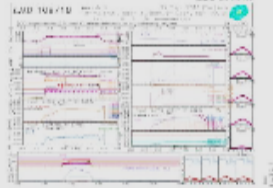
Weblinks to:

Fit coefficients,
Ufiles (1d, 2d),
Configuration data

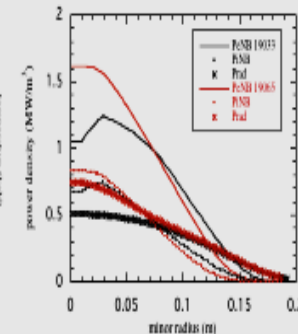
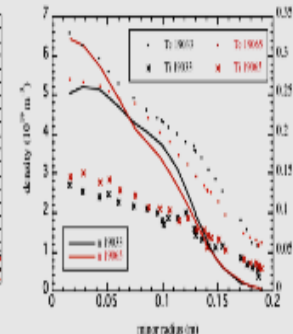
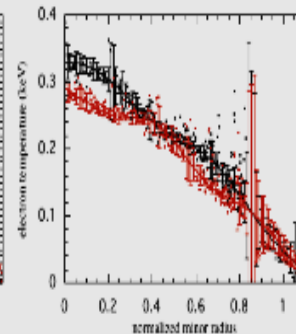
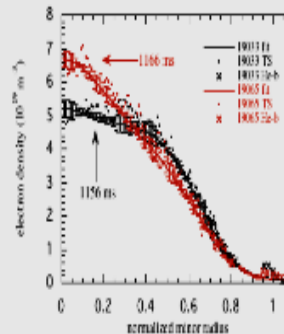
Discharge
waveform

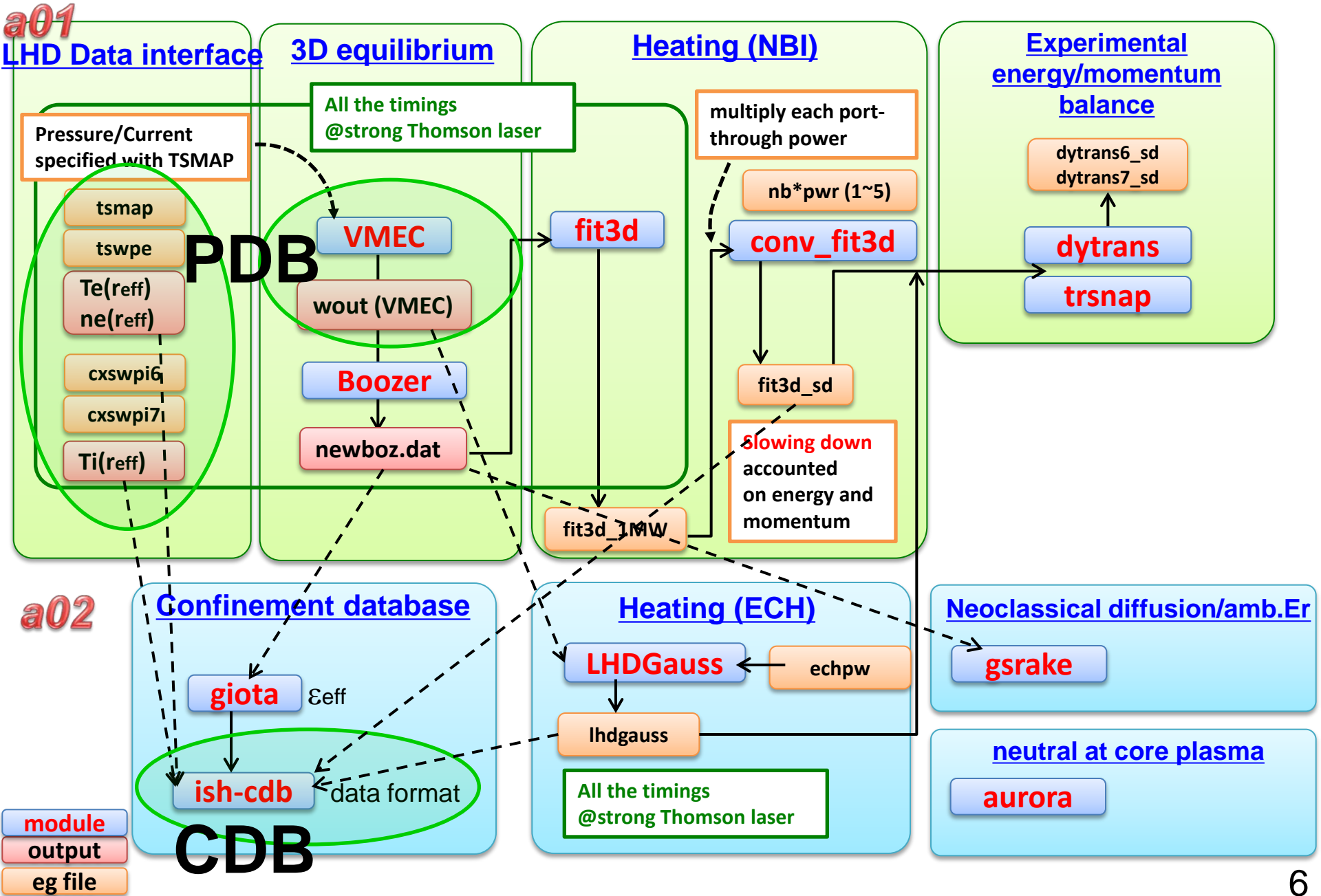
Profile data: ne, Te, Ti, Er etc...

109718
bt
UFILE
109718t4440_nT-ProfileFitting.txt
xml
Confinement Data
Configuration Data



TJ-II data
19033
bt
UFILE
tj2_019033_001156_v0001_2d.dat
xml
Confinement Data
Configuration Data





PDB as “unified basis”

Profiles and relevant 3D equilibrium for LHD discharges that

- created by TASK3D-a, and
- registered in PDB

have been provided to following codes

Plasma flow

fotrec-3d

penta

sfincs

EP/AE

delta5d

Gyrokinetic ITG simulation

gkv(-x)

Joint international collaboration for

- Code benchmarking
- Experimental validation can be smoothly conducted with PDB as unified basis.