

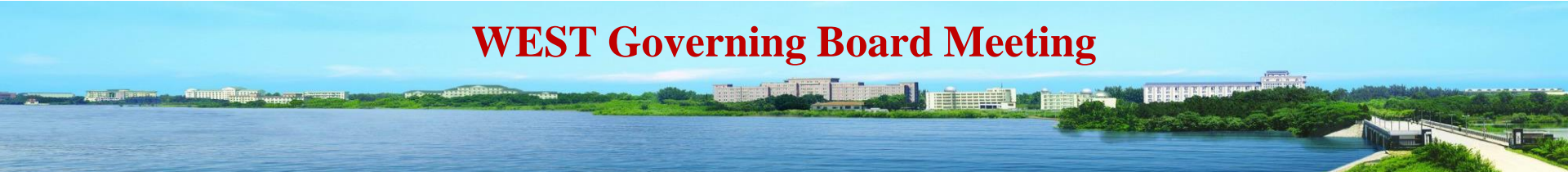
Collaboration between ASIPP and IRFM on WEST

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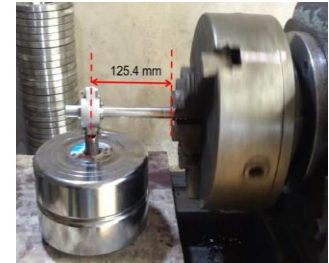
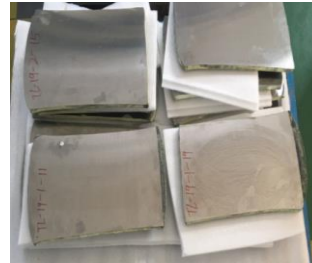
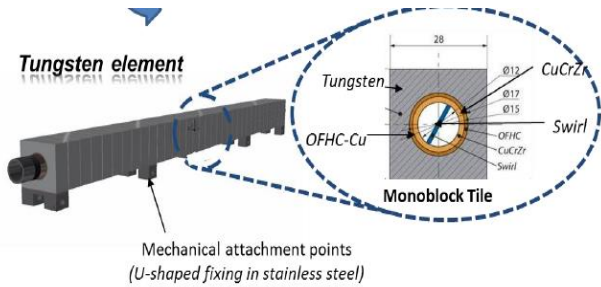
WEST Governing Board Meeting



Completion of full W monoblocks divertor for the WEST Phase II

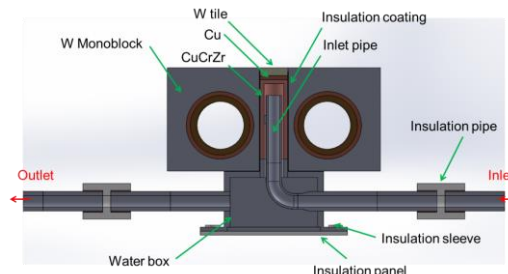


- Joint team ASIPP-IRFM work on the design, follow-up of manufacture and qualification of 456 monoblock PFUs; delivery by the end of 2019
 - Documentation finished, preparation for the raw material (70%) and some related tests.



- ASIPP will manufacture and deliver four actively cooled probes to CEA at the end of 2019

The actively cooled probes for WEST divertor have a heat removal capability up to **10-20 MW/m²**



ASIPP will send 2~3 person to CEA (Cadarache) in the frame of the W-DIV project

- **Reception activities**

- Dimensional, hydraulic, hardness tests, SATIR infrared thermography measurements etc....

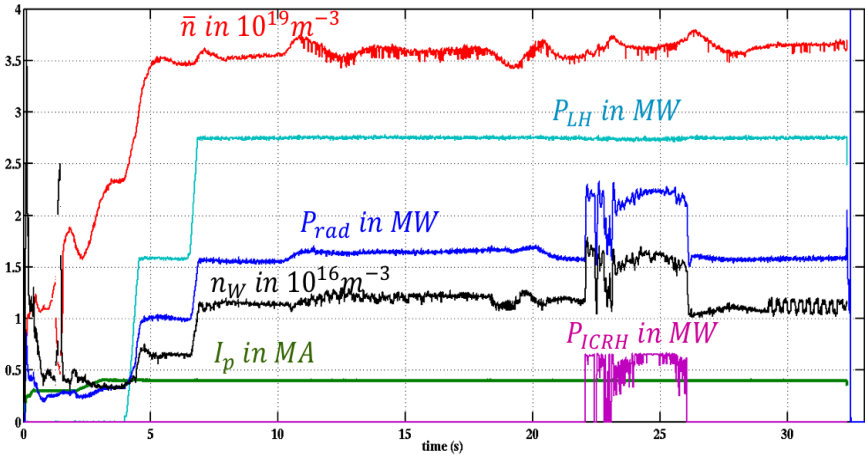
- **Assembly activities**

- Sequence definition and tools design
- Mock-up qualification and structure trial assembly
- Components assembling (including dedicated embedded instrumentation) and welding in the vacuum vessel
- Sector control (3D metrology) and testing (Helium leak test)

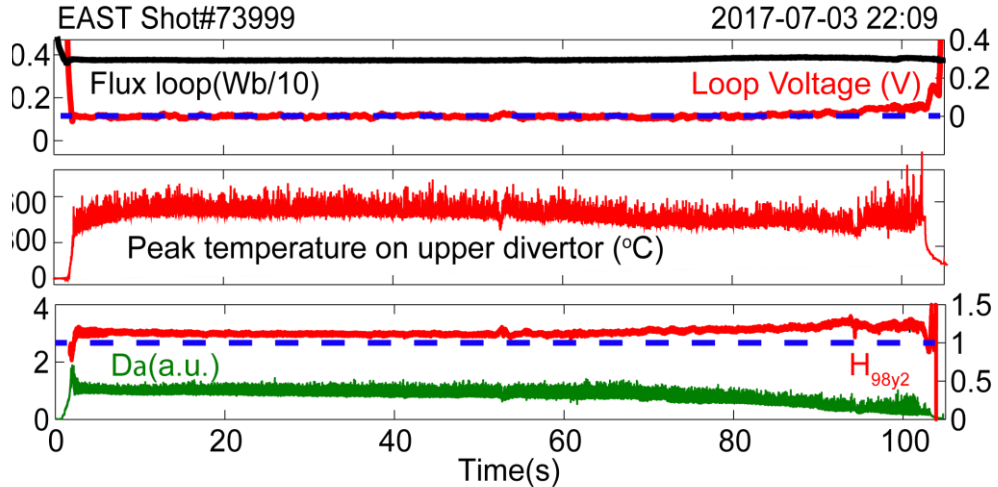
The Long Pulse Fully Non-inductive H-mode Operation with Dominate RF H&CD on EAST and WEST



WEST:>60s long pulse operation with upper divertor



EAST: 400s long pulse operation with $f_{bs} \sim 50\%$ and $H_{98} > 1.0$



Key Issues

1. High LHCD Efficiency at high density
2. Optimization of IC Coupling and Absorption
3. Heat flux control on first wall and divertor
4. Minimize High Z impurities

1. Joint experiments on WEST and EAST

- Coupling issues: gas puff
- Heating with different scenarios (minority heating, 2nd harmonic, mode conversion) in conjunction with access of H-mode
- Impurities and RF sheaths induced by ICRH
- Interpretative and predictive simulations with CEA codes: METIS, CRONOS and Full-wave code for predication different schemes, fast ions, RF sheaths...
- RF diagnostics: probes for RF sheaths ,ICE and RF Field ...

2. Development of Travelling Wave Array antenna for WEST

- Design and test of TWA mockup and assessment
- Studying the feasibility of integration of TWA on WEST

Cross-operation training of the joint team on WEST and EAST

1. Design and Test of RF components
2. Operation of RF Systems in long pulse
3. Optimizing the reliability of multi megawatt power coupling on WEST and EAST, in combining with other H&CD systems

Scientists Exchange

1. Interpretative and predictive simulations using CEA codes
2. Experimental analysis of EAST and WEST
3. Integrated plasma-wall modeling