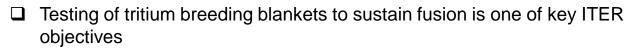
Paper number: IAEA-CN-258/FIP/P1-55

THERMAL-HYDRAULICS AND STRUCTURAL ANALYSES OF LLCB TBM SET

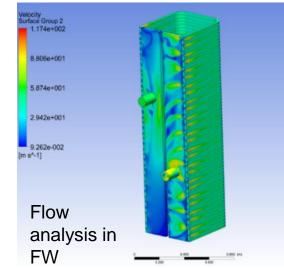
Deepak Sharma ¹, S. Ranjithkumar ¹, Paritosh Chaudhuri ^{1,2}, E. Rajendra Kumar ¹

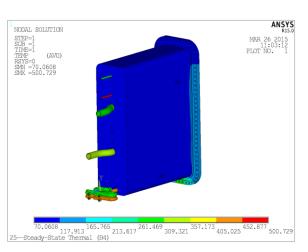
¹ Institute For Plasma Research, Bhat, Gandhinagar -380005, India

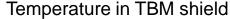
² Homi Bhabha National Institute Anushaktinagar, Mumbai - 400094, India

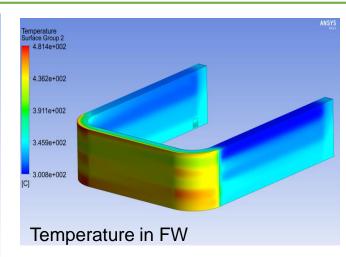


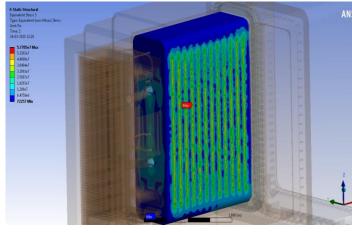
- ☐ India is working on LLCB (Lead lithium ceramic breeder) TBM (Test blanket module)
- The conceptual design and related analysis of LLCB TBM set has been completed
- ☐ Thermal hydraulics and structural analysis of TBM FW, its manifolds and TBM shield has been performed.
- ☐ Flow distribution using CFD in FW shows uniform flow in all circuits
- □ Regulation of flow in TBM shield channels using orifices is confirmed by CFD simulation
- ☐ Thermal analysis of TBM shield performed based on flow distribution results
- ☐ Thermal hydraulic CFD analysis of single FW circuit done and Heat transfer coefficient ,pressure drop validated with analytical results
- ☐ Temperatures and stresses are found to be acceptable











Primary stress in TBM shield