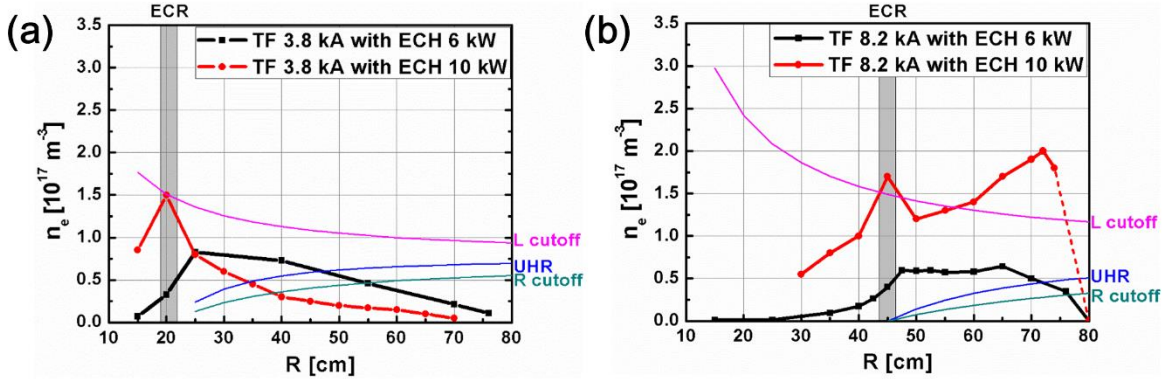
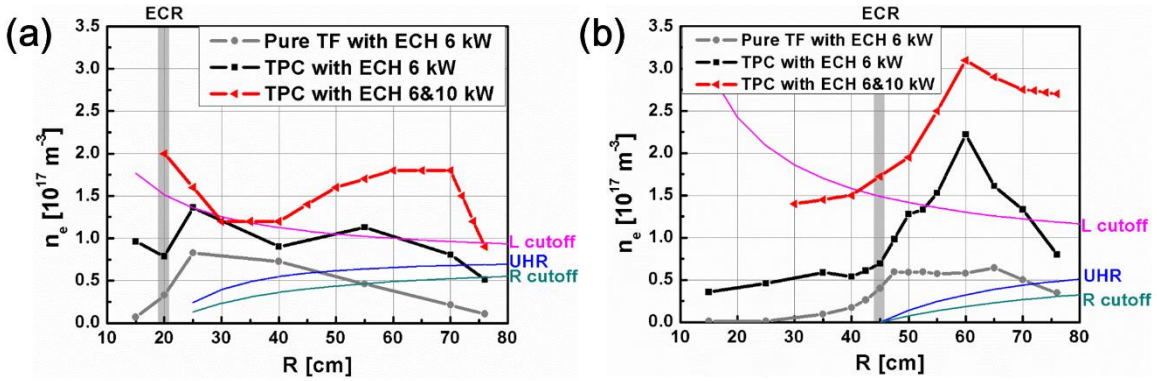
Study on EBW assisted start-up and heating experiments via direct XB mode conversion from low field side injection in VEST

➢ EBW assisted pre-ionization experiments

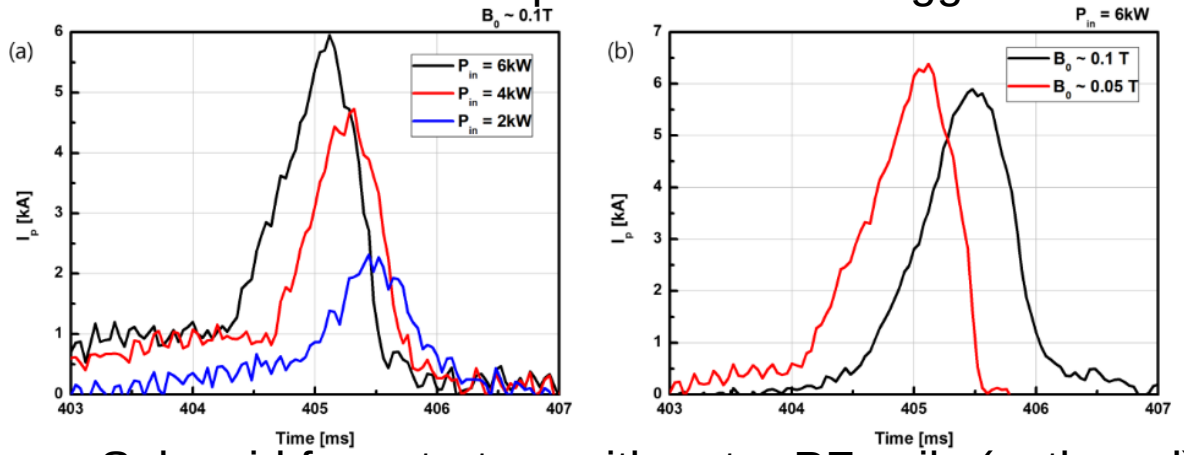


- Under pure TF, density peak near inboard or outboard
- Over dense plasma : EBW collisional damping



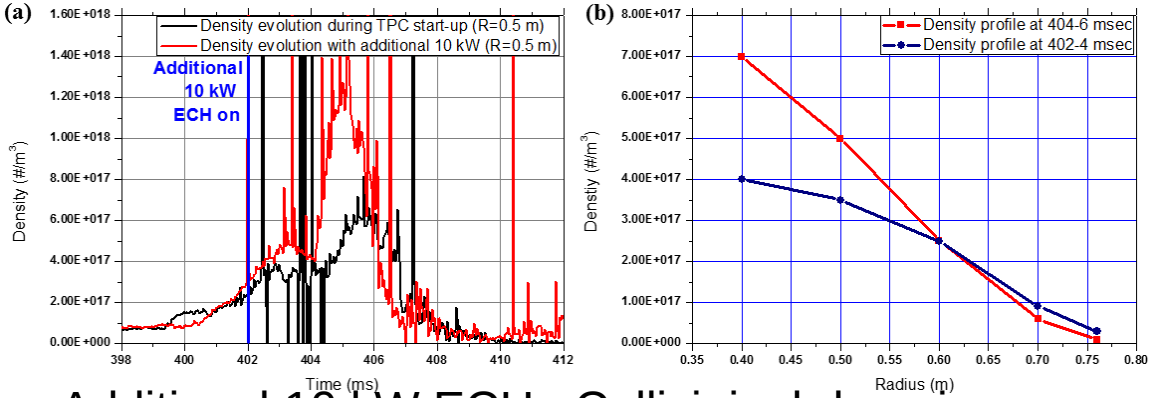
- Under TPC, density peak near inboard or outboard
- Over dense plasma : EBW collisional damping
- Simulated 1-D Full wave code : MC efficiency
- Based on the ohmic start-up experiments

➢ EBW assisted start-up : 2 Schemes Suggestion



- Solenoid free start-up with outer PF coils (outboard)
- Extremely low loop voltage start-up (inboard)

➢ EBW heating experiments



- Additional 10 kW ECH : Collisioinal damping
- Decreasing collisionality : operating pressure, I_p, high T_e
- Plasma heating via direct XB MC from LFS injection