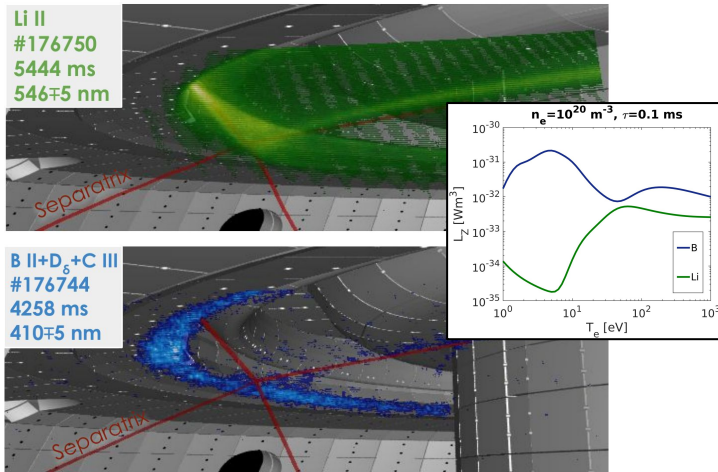


Enhanced radiative divertor power exhaust through injection of low-Z powders in DIII-D



Low Z powder-assisted divertor dissipation

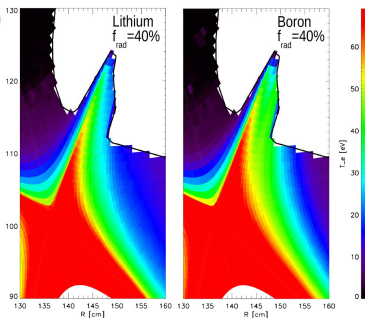
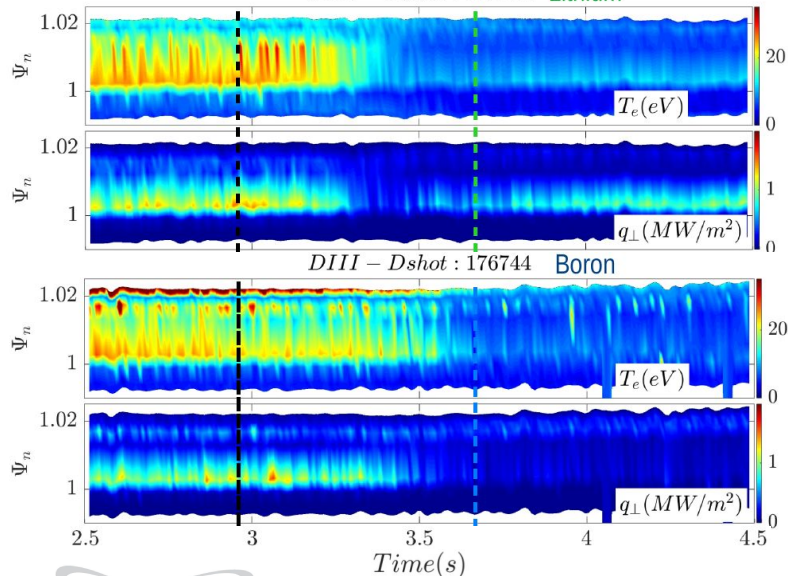
- Enables use of alternative impurity species: B, Li, Be, Si, BN, ...)
- Near-target neutral pressure increased by a factor up to 3, rapid reduction of the divertor T_e and q_{\perp} for lithium and boron, respectively;
- Boron nitride reduces ELM activity

Core-edge capability

- Low Z powders create dissipative divertor & detachment while plasma energy confinement is maintained

Camera data and modeling

- Species-dependent dissipation in near SOL (Li) and attached to targets (B)



-> Synergistic use of low Z powders promising to optimize divertor dissipation and PMI

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