Experimental Evidence of the Effects of Pellet Injection on ELMs

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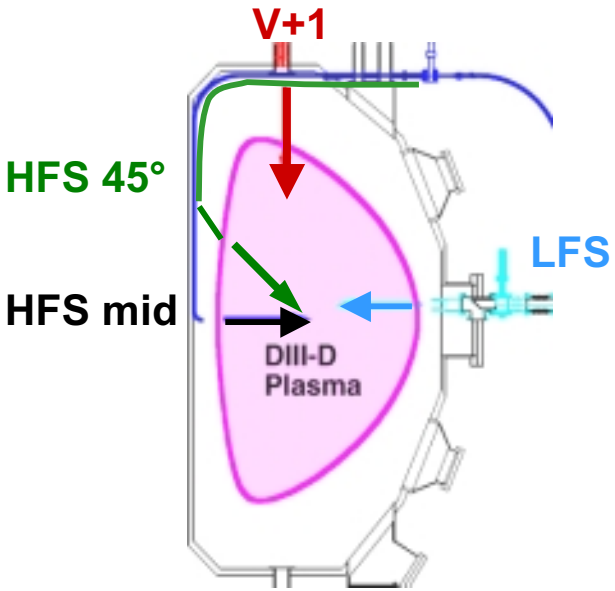
Overview

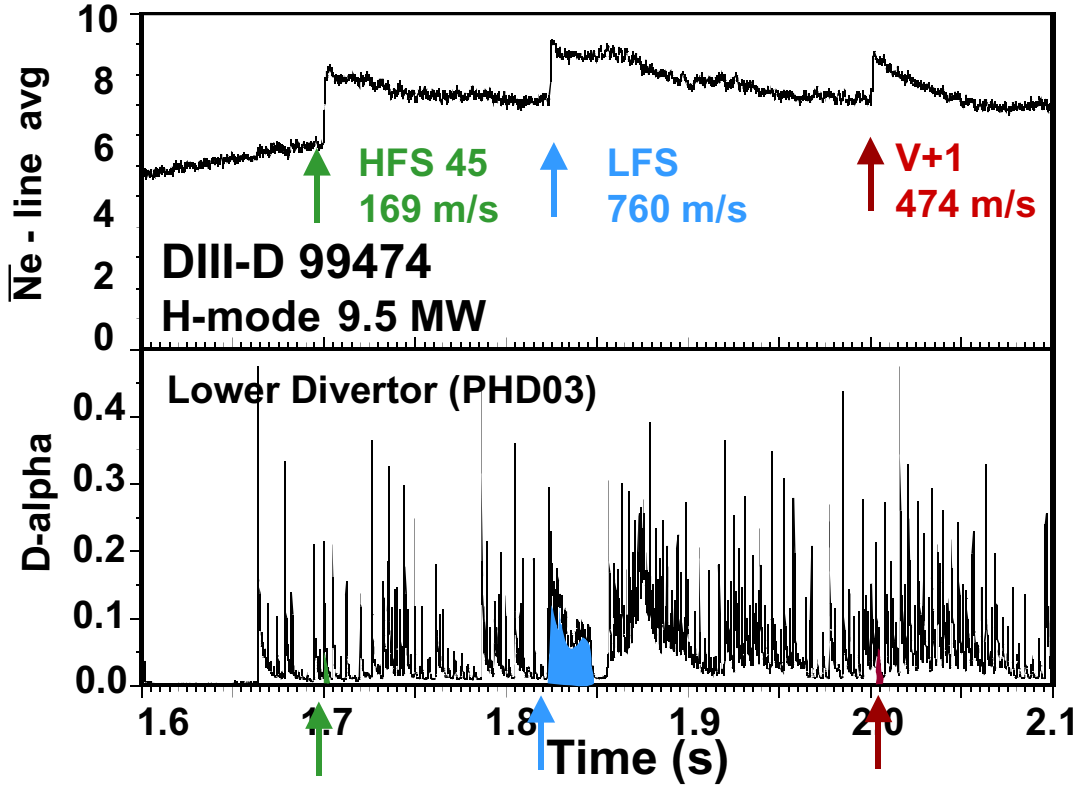
- **High field side (HFS) and vertically injected pellets during H-mode trigger ELMS with reduced magnitude and duration compared with LFS injected pellets**

Direct Comparison in H-mode - HFS Pellets Trigger Smaller ELMs

2.7mm Pellets

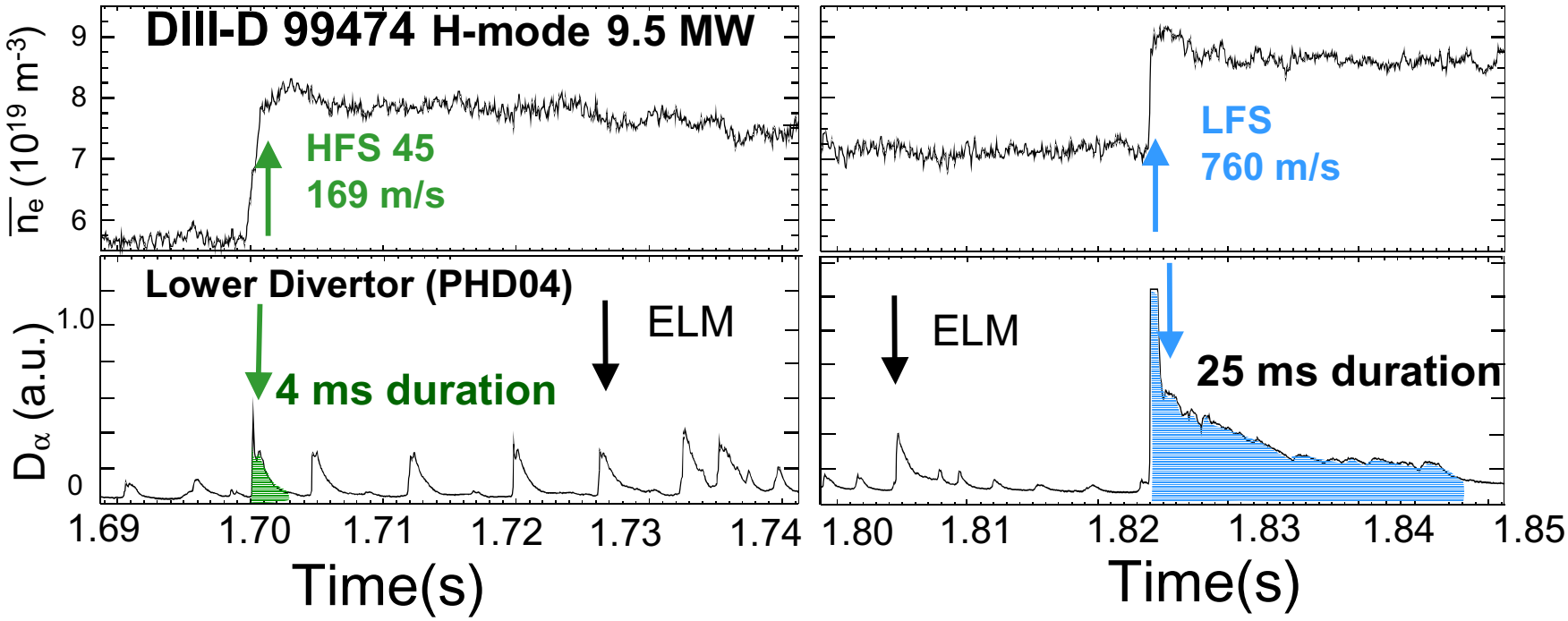
HFS 45° vs LFS vs V+1





- 2.7mm pellets injected into the same 9.5 MW NBI double null H-mode plasma from several locations (HFS 45, LFS, and V+1)
- ELMs are triggered by the pellets, but are much smaller for the HFS and vertical pellets

HFS Pellets produce different ELM characteristics than LFS pellets



- **HFS pellet induced ELMs are small, like the background ELMs**
- **LFS pellets induce large ELMs, much longer lasting than background ELMs**
  - **ExB drift loss of particles may be responsible**
  - **P´ modification at edge may be different for HFS and LFS pellets**