

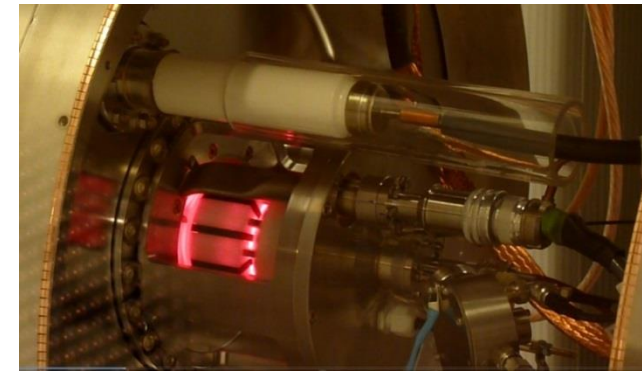
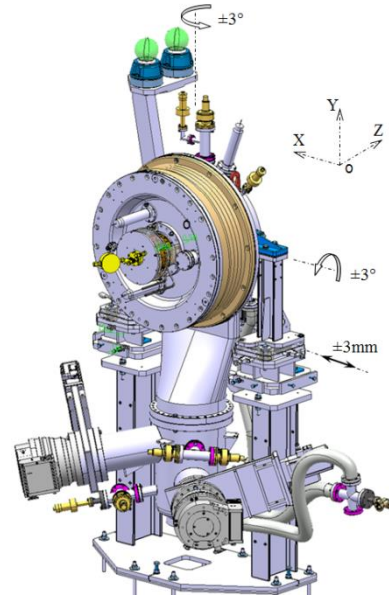
Linac4 H⁻ source

Sept. 2nd 2013: 1st H⁻ beam in linac4

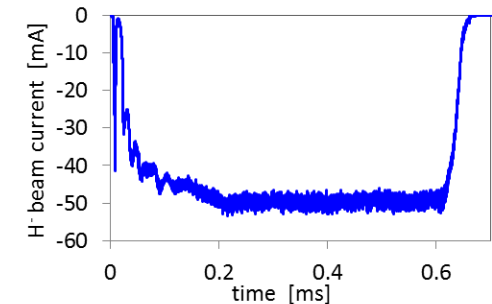
Matching the very tight of the 3MeV TS (mid. 2012) & L4-commissioning schedules (sept.2013)

Flexible *front end* suited for unprecedented IS-diversity :

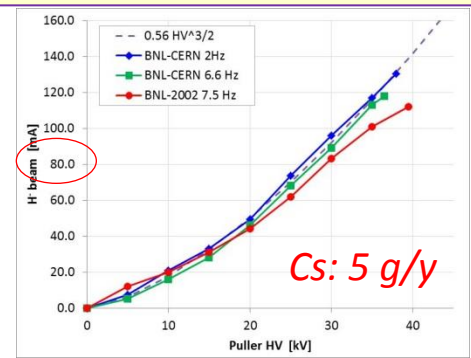
- Direct extraction of H⁻ from the RF-H₂ plasma volume (Desy *Volume IS 20 mA*)
- Extraction of H⁻ emitted form from a cesiated Mo-surface after impact of RF-H₂ plasma produced H₀ or p (SNS *Surface IS 50 mA*)
- Extraction from an arc discharge induced Cs-H plasma (BNL's *Magnetron 100 mA*)
- Proton source (p, H₂⁺, H₃⁺)



Dec. 13th 2013: First 50 mA pulse of the cesiated surface prototype

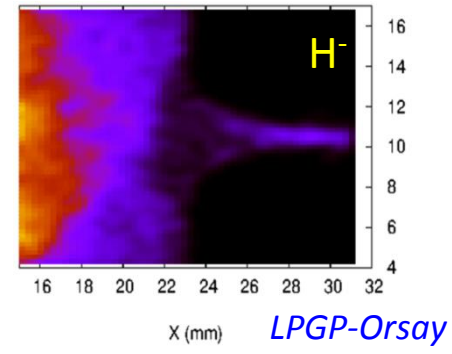
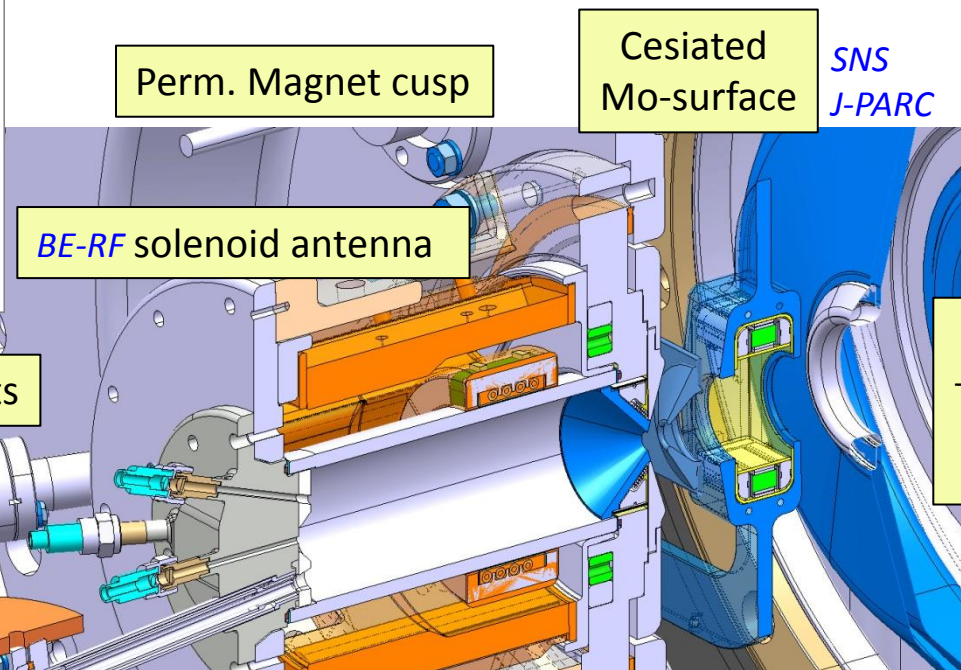
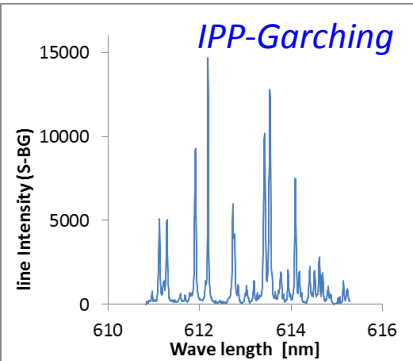


Oct. 9th 2013: Nominal Linac4 beam tested @ BNL, 2 & 6.6 Hz

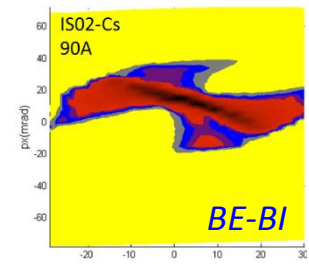


ABP-HSL's Cesium surface Linac4 H⁻ source: How does it work? Who made it possible?

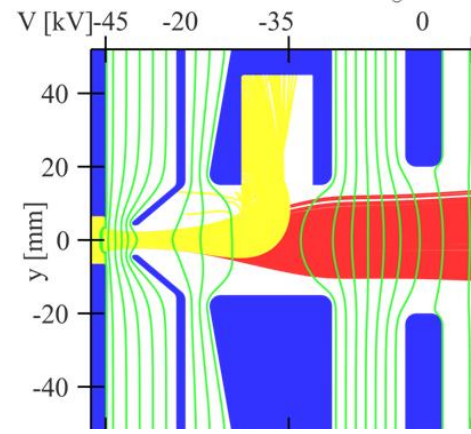
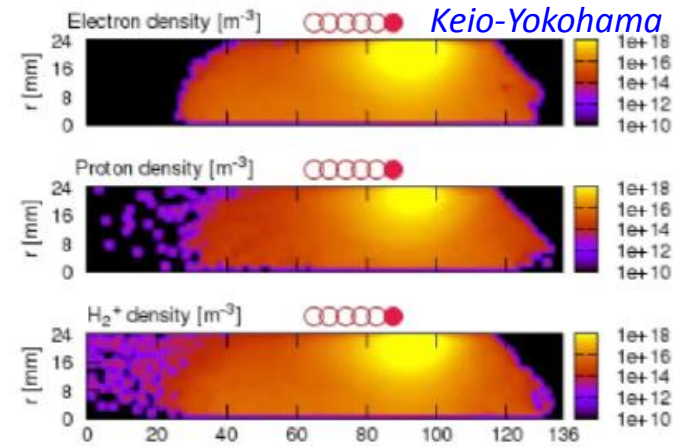
77 Identified contributors,
8 external institutions
19 TS, PhD & fellows (22 FTE)



Pulsed HVs
-45 kV source
25 kV puller
10 kV dump



TE-EPC



Most physics processes within this H⁻ source are simulated, now entering engineering phase