LULI2000 experiment in Jan 2015 (Al)

Plasma parameters from FCI2

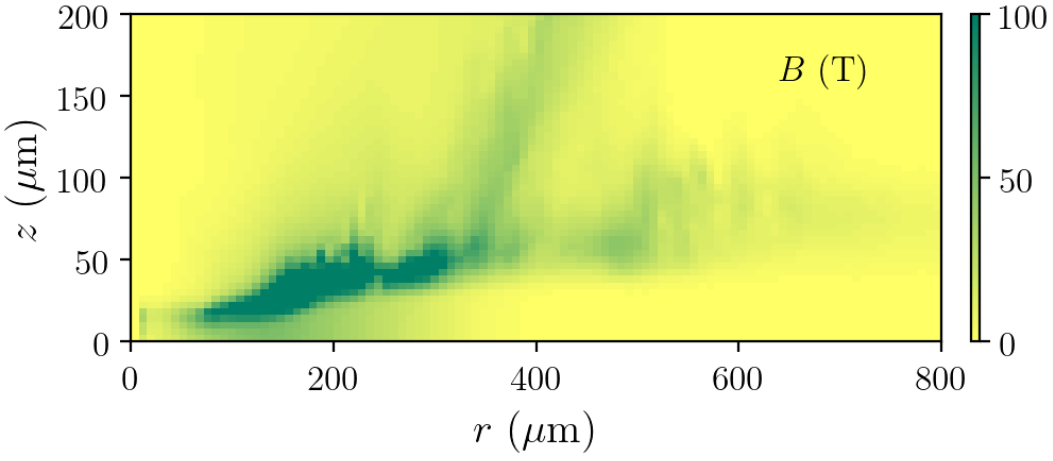
In physical units measured at 2 ns

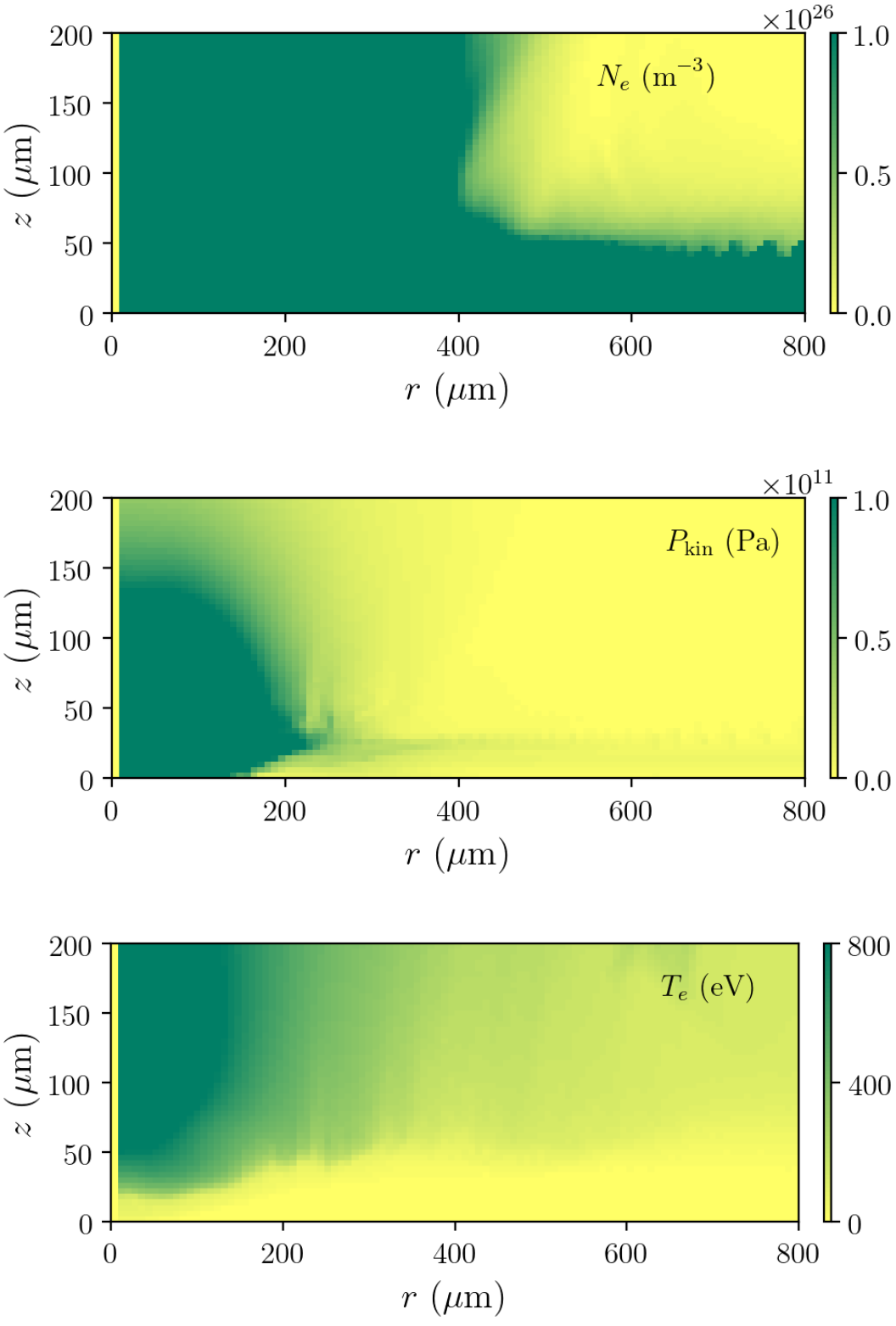
- Total magnetic field magnitude : $B_0 = 60$ T
- Magnetic ribbon between $L_i = 100$ μm & $L_o = 600$ μm. Thickness : $L_t = 60$ μm
- Electron density $N_0 = 4\ 10^{25}$ m^{-3} (ratio with max density at hot spot = 10)
- Total kinetic pressure (mainly from electrons because $Z^\star = 6$) : $P_k = 2\ 10^{10}$ Pa
- Electron temperature (should be the same as ions by collisions) : $T_e = 400$ eV
- Total time of irradiation $T_{\max} = 4.0$ ns with 0.2 kJ
- Proton inertial length : $l_i = 36.0$ μm
- Proton gyroperiod : $\Omega_i = 17.4$ ps
- Alfvén velocity : $V_0 = 207$ km.s^{-1}

In hybrid units (that is at $t = 115.0$)

- $T_e = 0.9$ — $T_i = 0.9$
- $A = 27$ — $Z = 13$ — $Z^\star = 6$
- $L_i = 2.8$ — $L_o = 16.7$ — $L_t = 1.7$
- Asymptotic beta parameter : $\beta_e = 1.8$ — $\beta_i = 0.1$
- $\Omega_i = 2.1$ — $T_{\max} = 230.0$
- Ion thermal velocity : $v_i = 0.18$ — ion Larmor radius : $\rho_i = 0.37$

Snapshots




×10^26
N_e (m^{-3})
1.0
0.5
0.0
200
150
100
50
0
z (μm)
0
200
400
600
800
r (μm)
×10^11
P_{kin} (Pa)
1.0
0.5
0.0
200
150
100
50
0
z (μm)
0
200
400
600
800
r (μm)
T_e (eV)
800
400
0
200
150
100
50
0
z (μm)
0
200
400
600
800
r (μm)