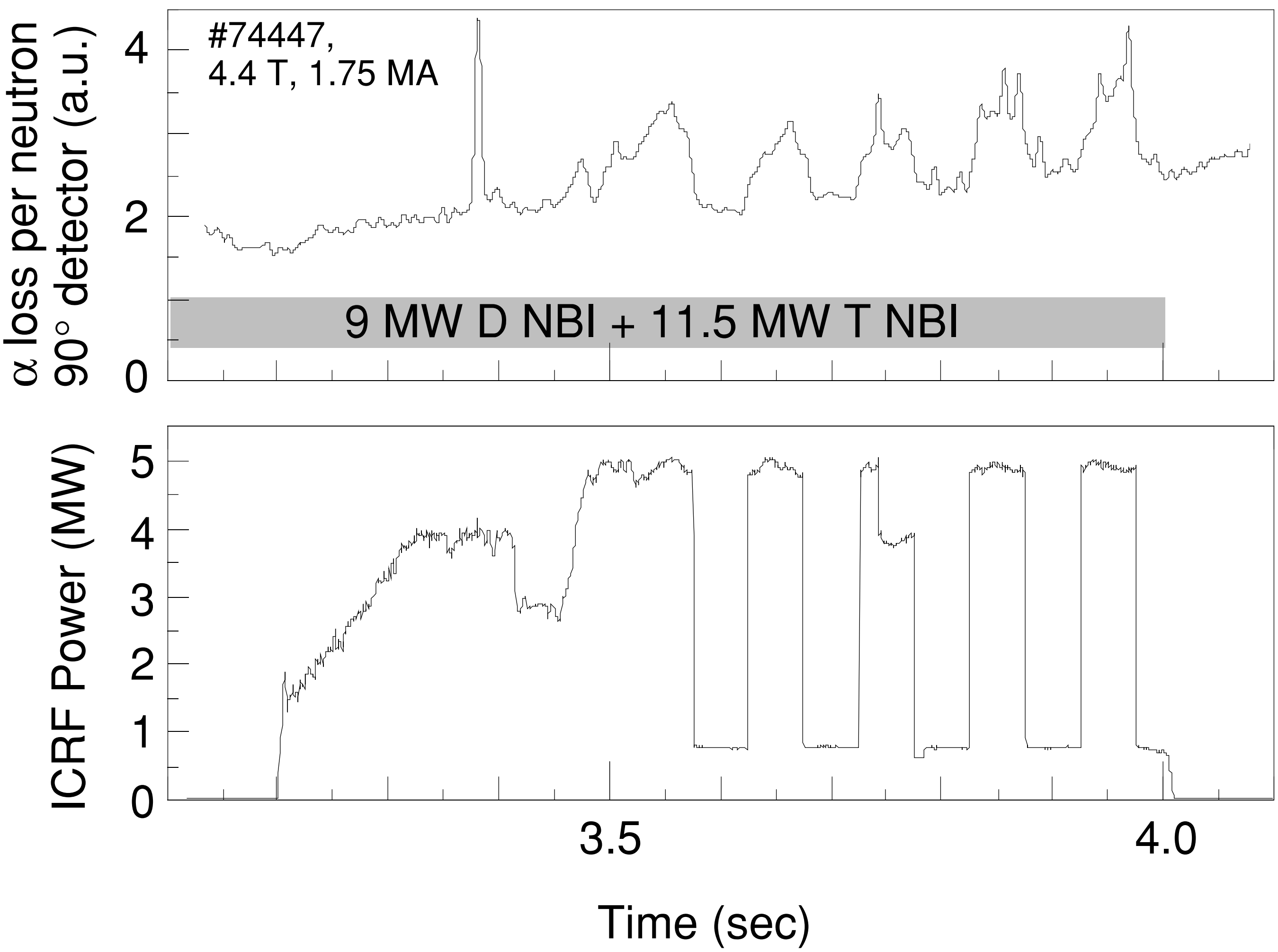


α loss per neutron
90° detector (a.u.)
#74447,
4.4 T, 1.75 MA
9 MW D NBI + 11.5 MW T NBI
0
2
4
ICRF Power (MW)
0
1
2
3
4
5
3.5
4.0
Time (sec)

Fig. 38

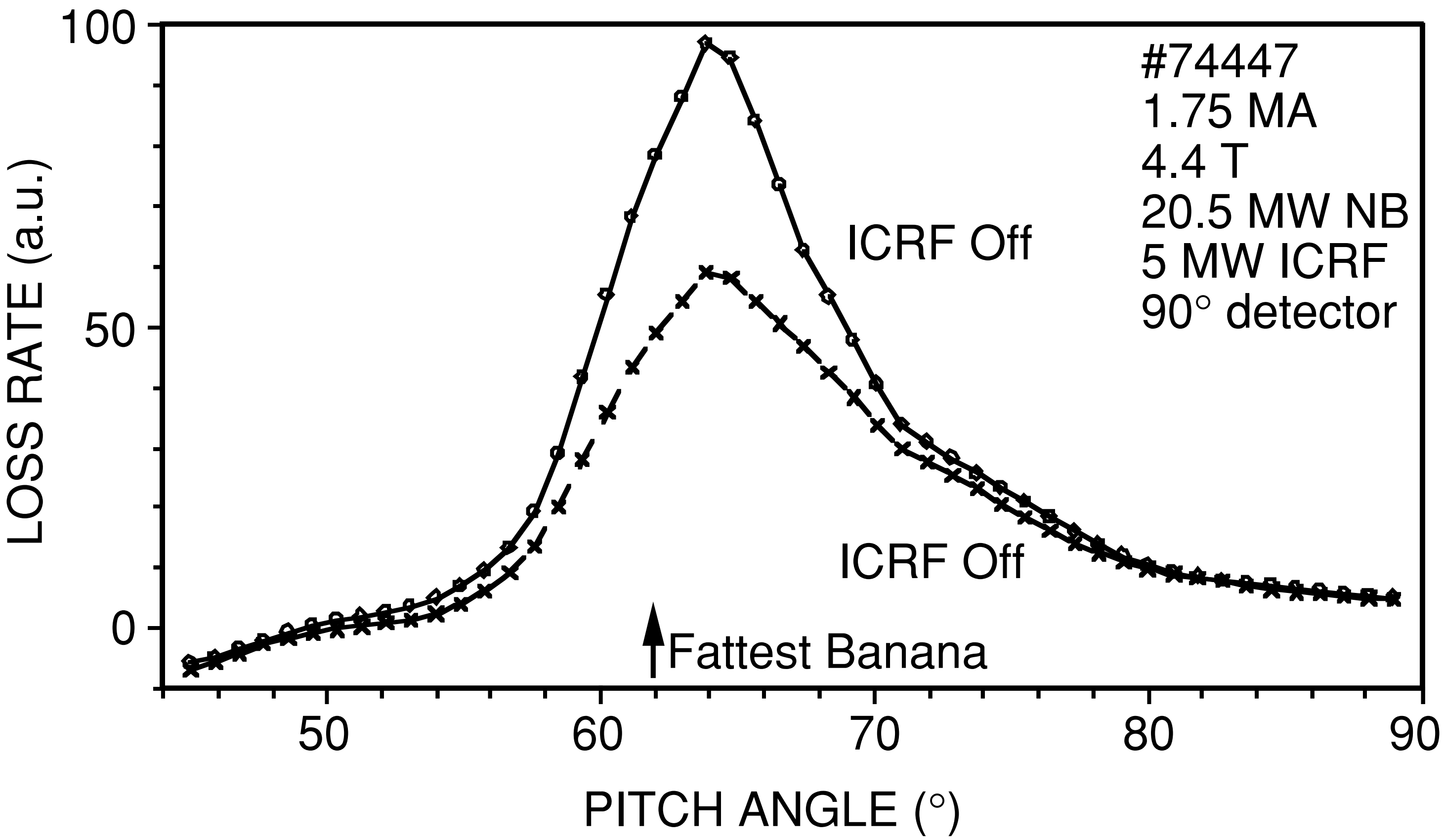
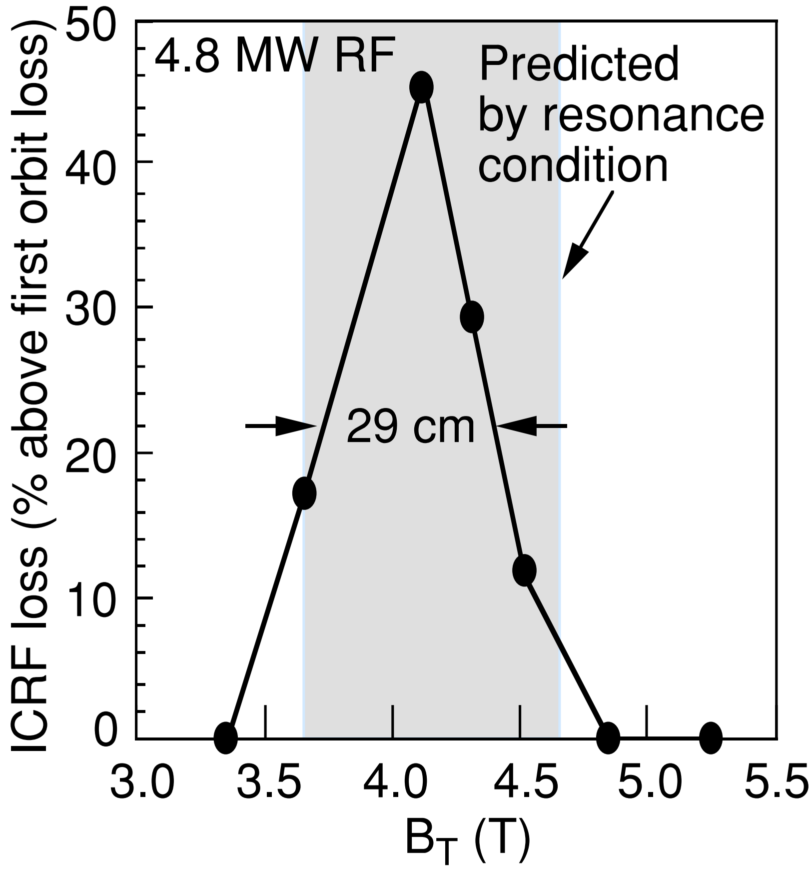

100
50
0
LOSS RATE (a.u.)
50
60
70
80
90
PITCH ANGLE (°)
#74447
1.75 MA
4.4 T
20.5 MW NB
5 MW ICRF
90° detector
ICRF Off
ICRF Off
Fattest Banana

Fig. 39



4.8 MW RF
Predicted
by resonance
condition
29 cm
ICRF loss (% above first orbit loss)
B_T (T)
0
10
20
30
40
50
3.0
3.5
4.0
4.5
5.0
5.5

Fig. 40

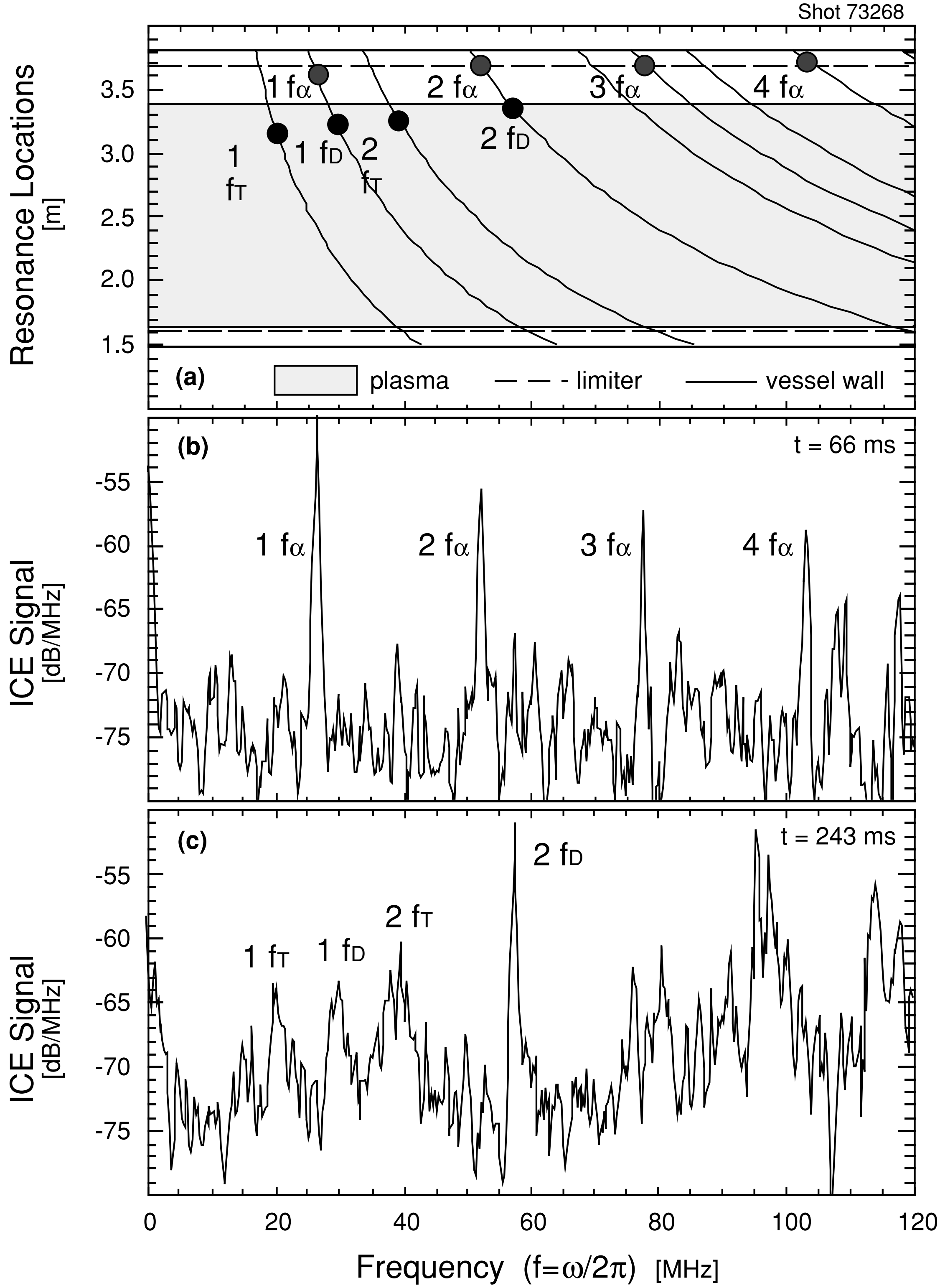

Shot 73268
Resonance Locations [m]
3.5
3.0
2.5
2.0
1.5
1 fα
2 fα
3 fα
4 fα
1 fD
2 fD
1 fT
2 fT
(a)
plasma
- limiter
vessel wall
(b)
t = 66 ms
ICE Signal [dB/MHz]
-55
-60
-65
-70
-75
(c)
t = 243 ms
0
20
40
60
80
100
120
Frequency (f=ω/2π) [MHz]

Fig. 41

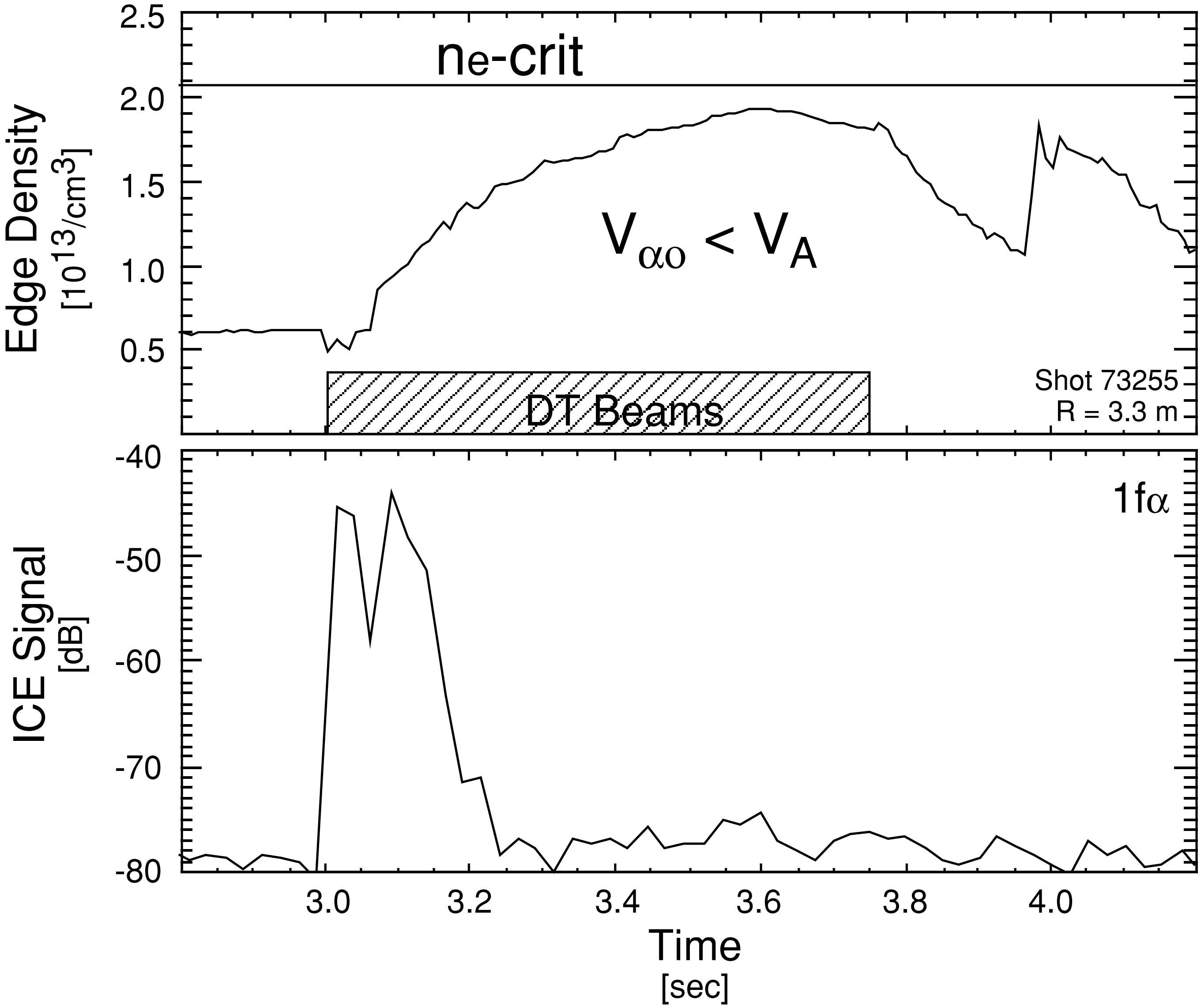

ne-crit
Edge Density
[10^13/cm^3]
$V_{\alpha o} < V_A$
DT Beams
Shot 73255
R = 3.3 m
2.5
2.0
1.5
1.0
0.5
ICE Signal
[dB]
1fα
-40
-50
-60
-70
-80
3.0
3.2
3.4
3.6
3.8
4.0
Time
[sec]

Fig. 42

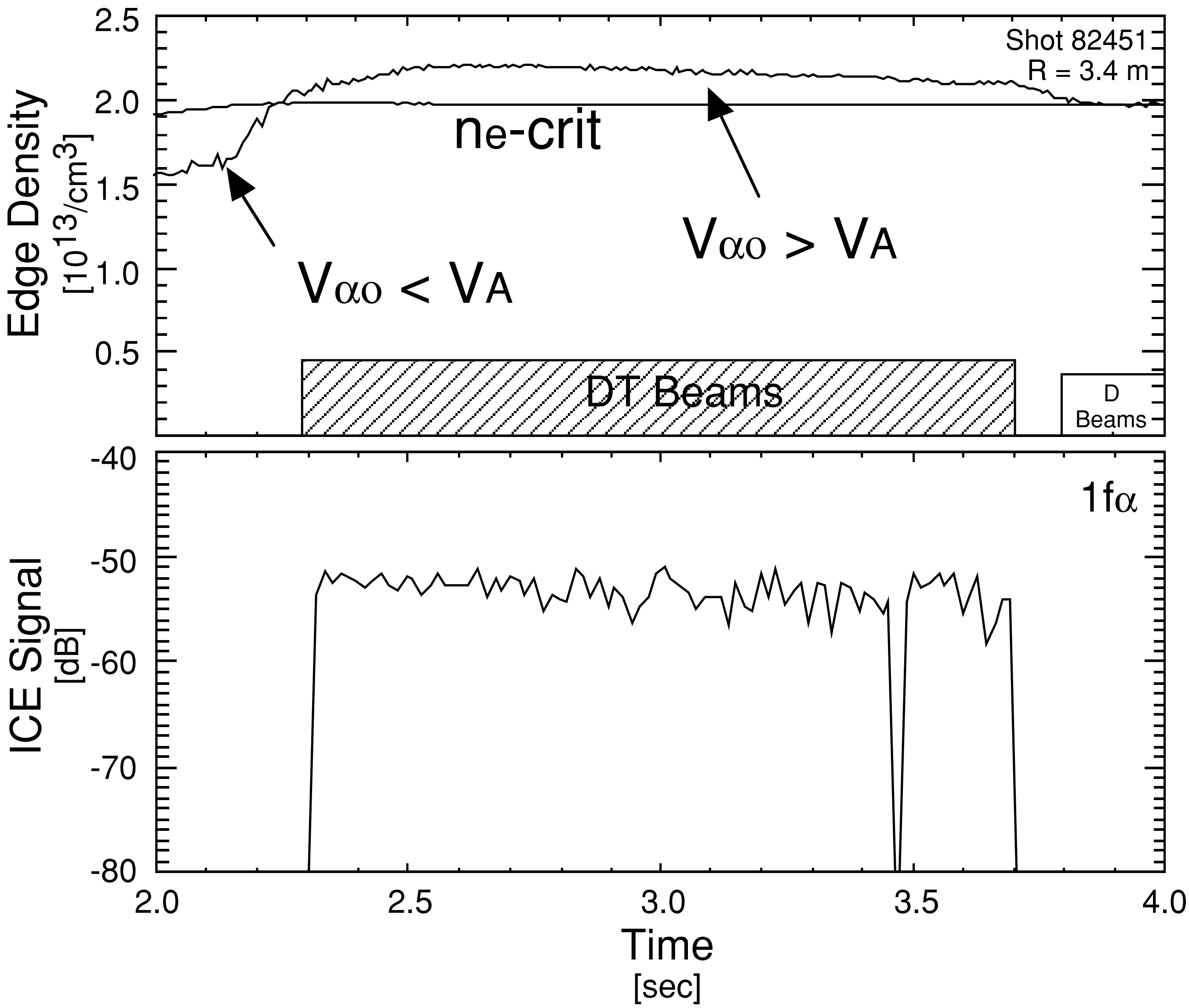

Shot 82451
R = 3.4 m
2.5
2.0
1.5
1.0
0.5
Edge Density
[10^13/cm^3]
ne-crit
Vαo < VA
Vαo > VA
DT Beams
D
Beams
-40
-50
-60
-70
-80
ICE Signal
[dB]
1fα
2.0
2.5
3.0
3.5
4.0
Time
[sec]

Fig. 43

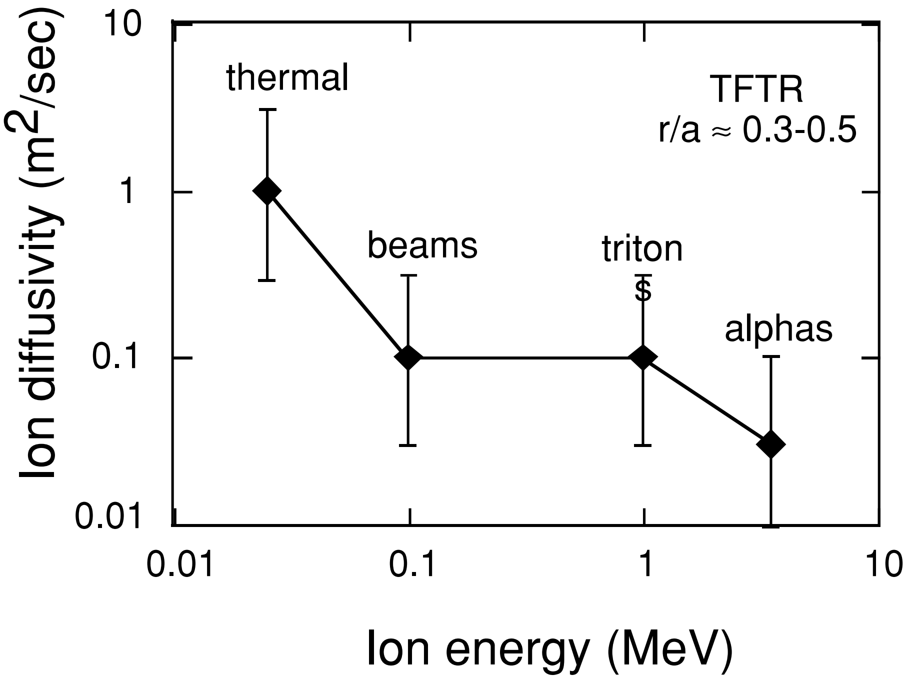

Ion diffusivity (m2/sec)
10
1
0.1
0.01
thermal
beams
triton
s
alphas
TFTR
r/a ≈ 0.3-0.5
0.01
0.1
1
10
Ion energy (MeV)

Fig. 44