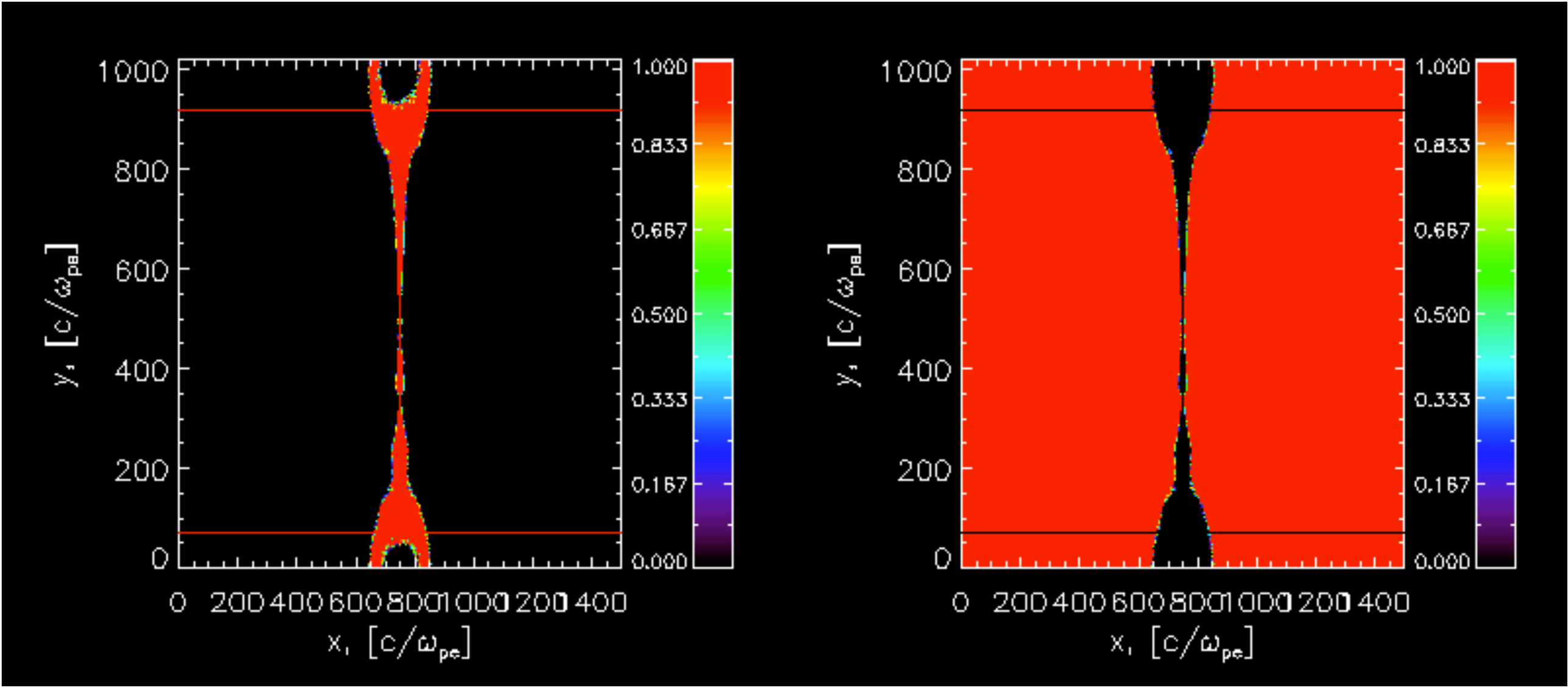

1000
800
600
400
200
0
y, [c/ω_pe]
0 200 400 600 800 1000 200 400
x, [c/ω_pe]
1.000
0.833
0.667
0.500
0.333
0.167
0.000

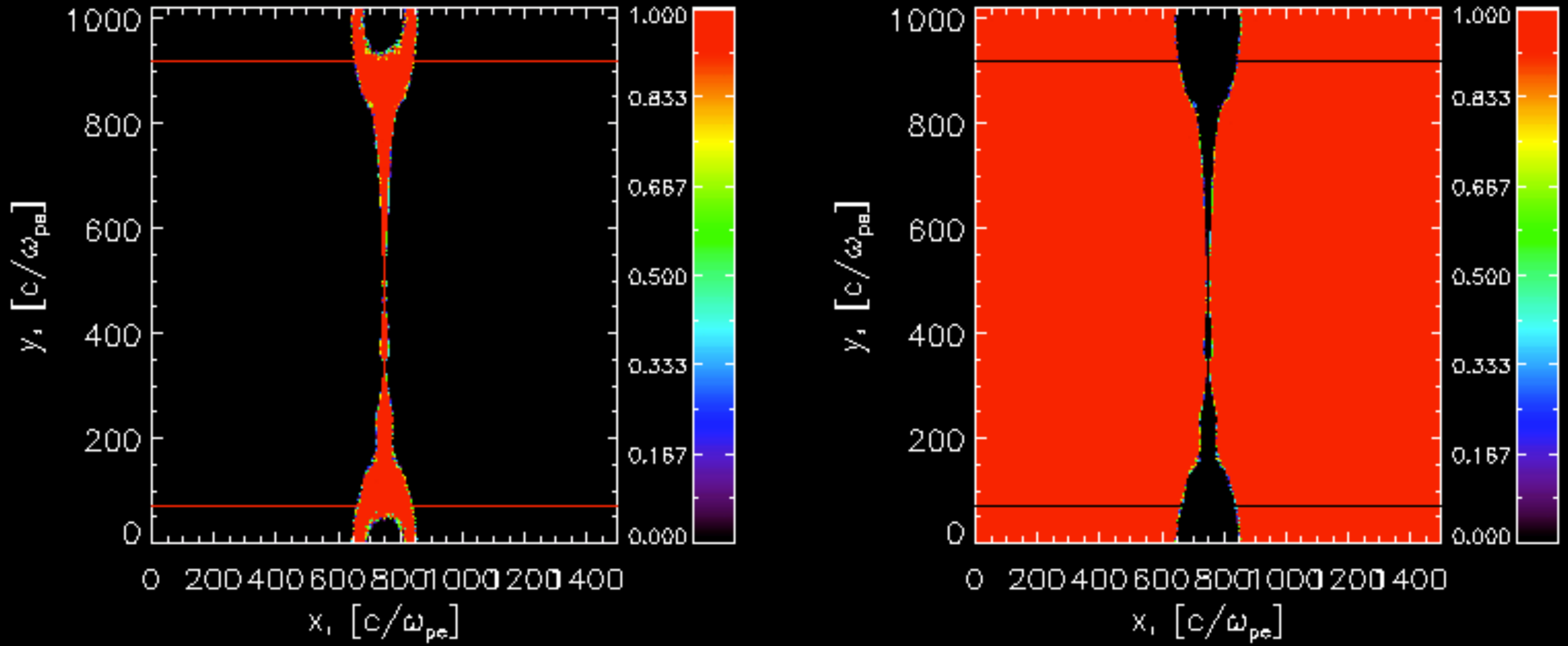
How to identify where reconnection has happened?

Track tagged particles; measure ratio of tagged to total density in each cell

Tag particles on right

If there is enough mixing, count cell as reconnected

Region selected is insensitive to the particular threshold value


1000
800
600
400
200
0
y, [c/ω_pe]
0 200 400 600 800 1000 200 400
x, [c/ω_pe]
1.000
0.833
0.667
0.500
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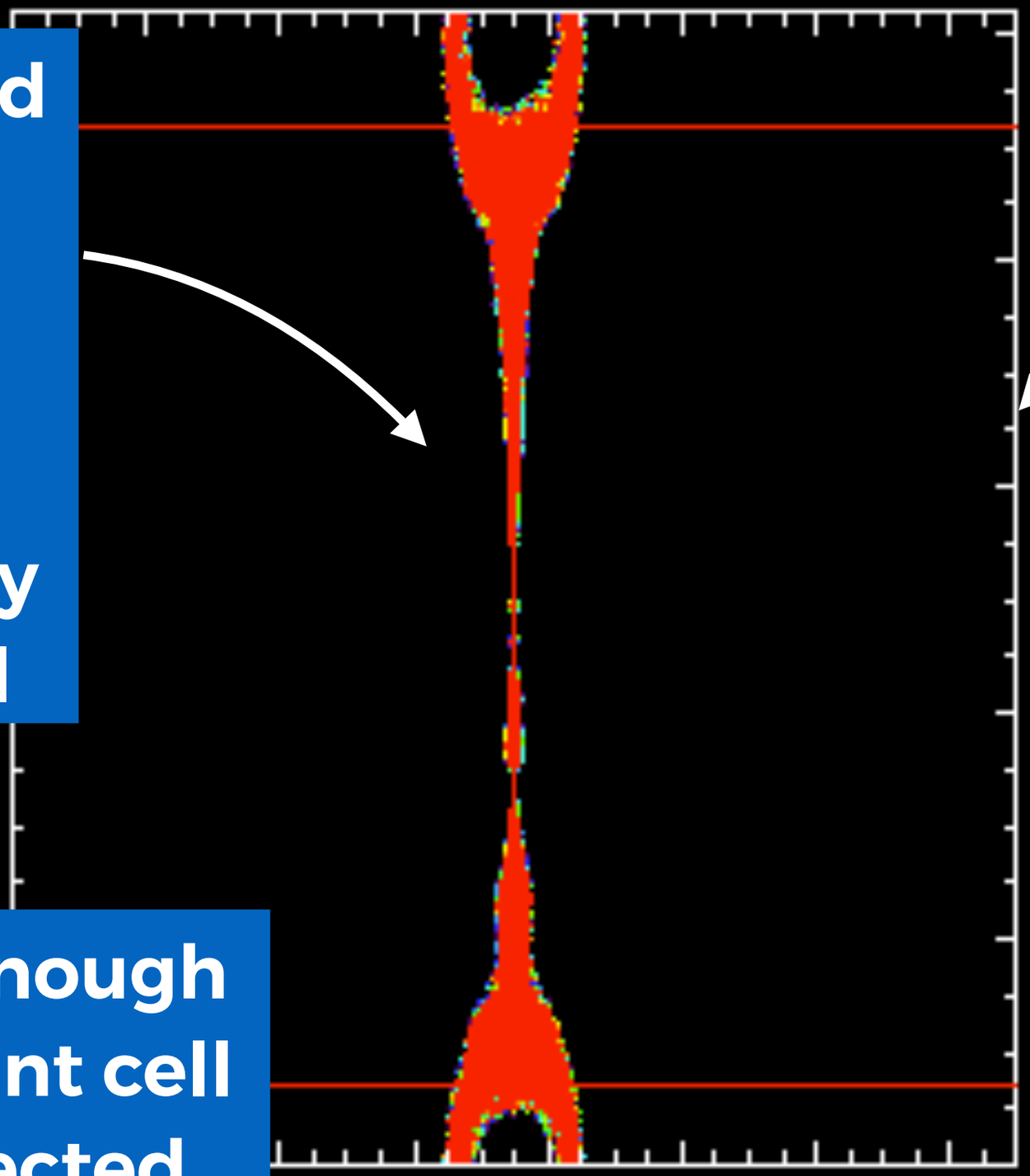
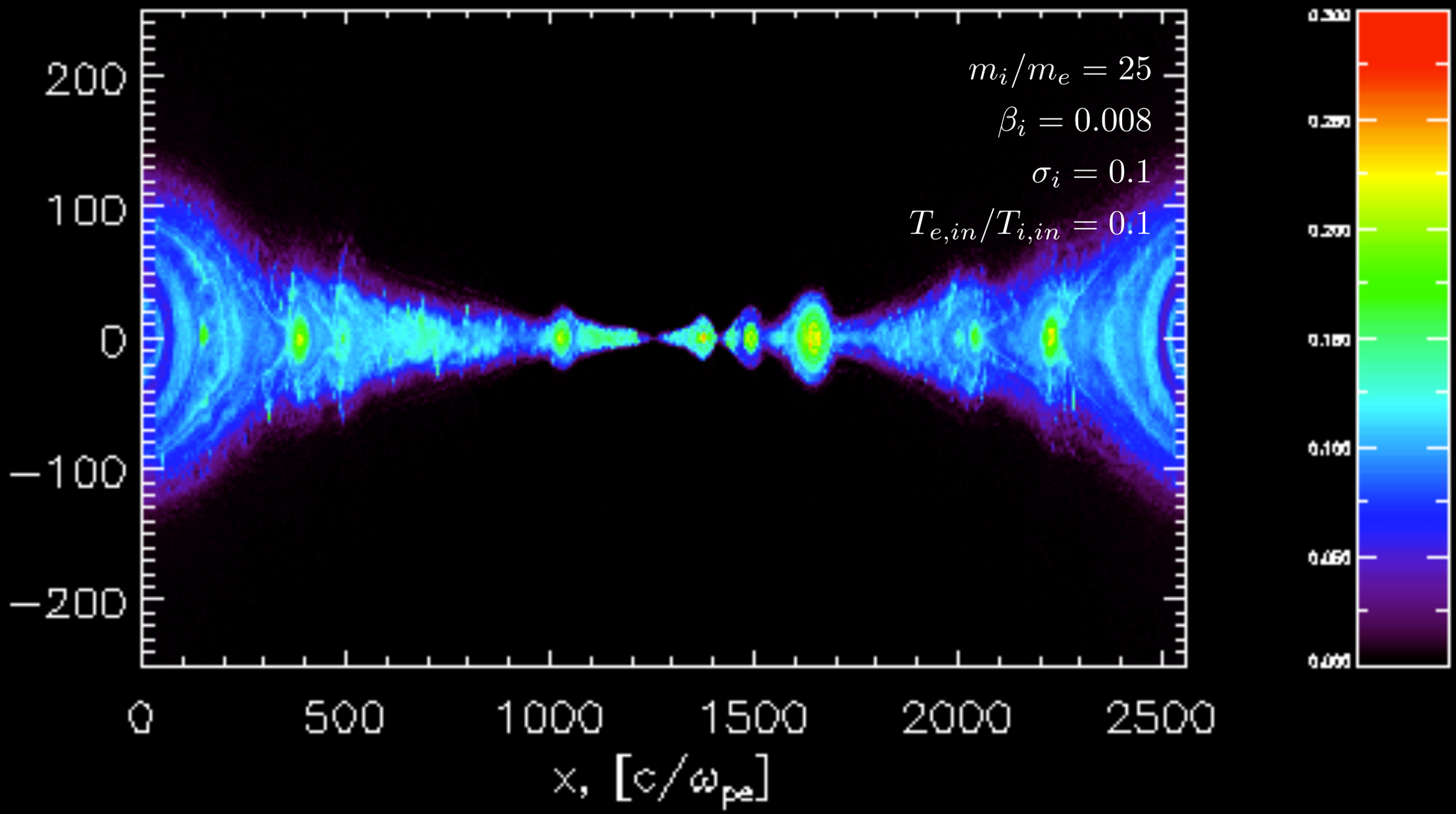


Tag particles on right

If there is enough mixing, count cell as reconnected

Region selected is insensitive to the particular threshold value

This is a low-beta plasma...

- The circular substructures are ‘magnetic islands’
- They form due to the tearing instability
- Islands heat particles by ‘bouncing’