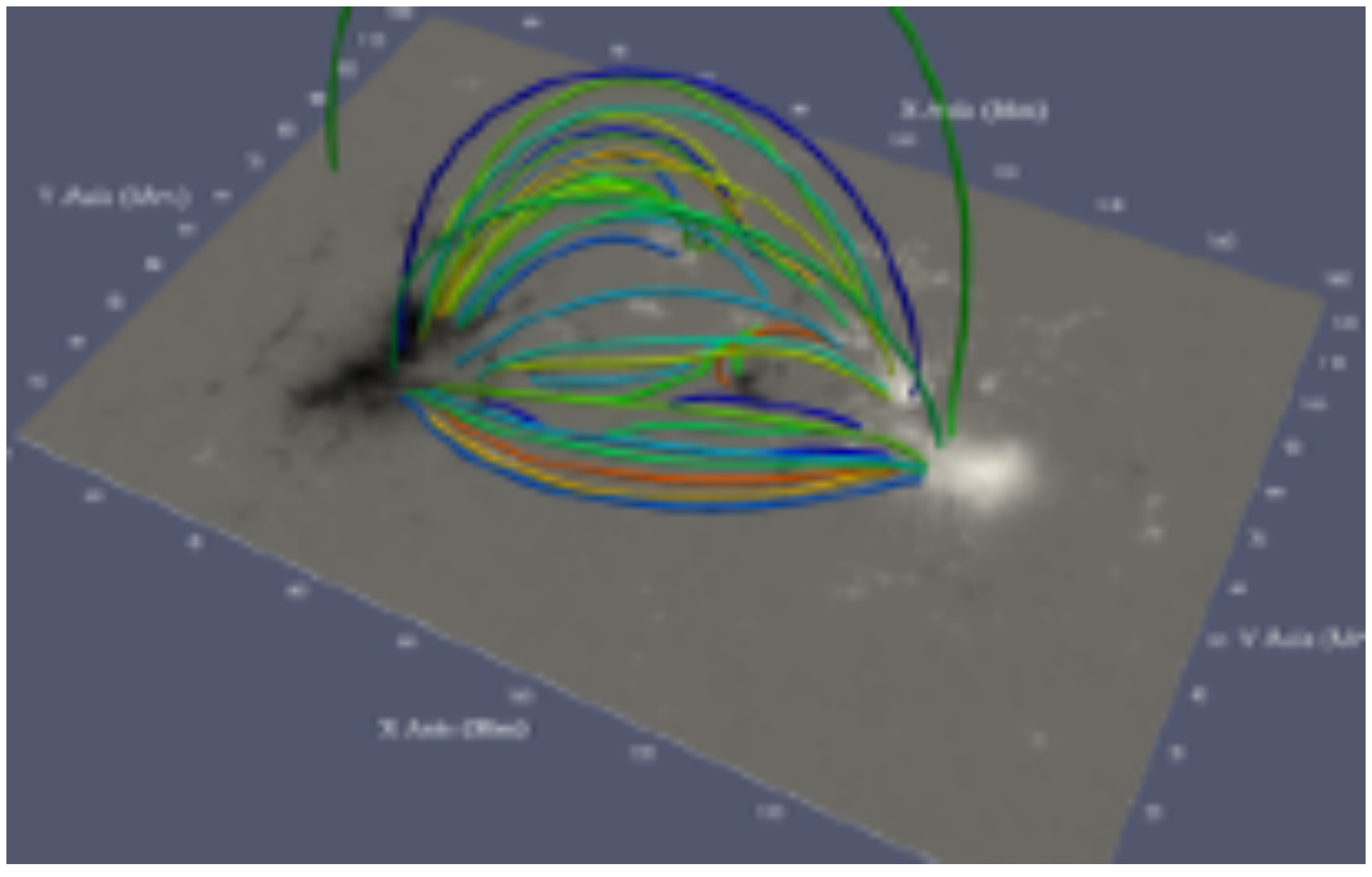
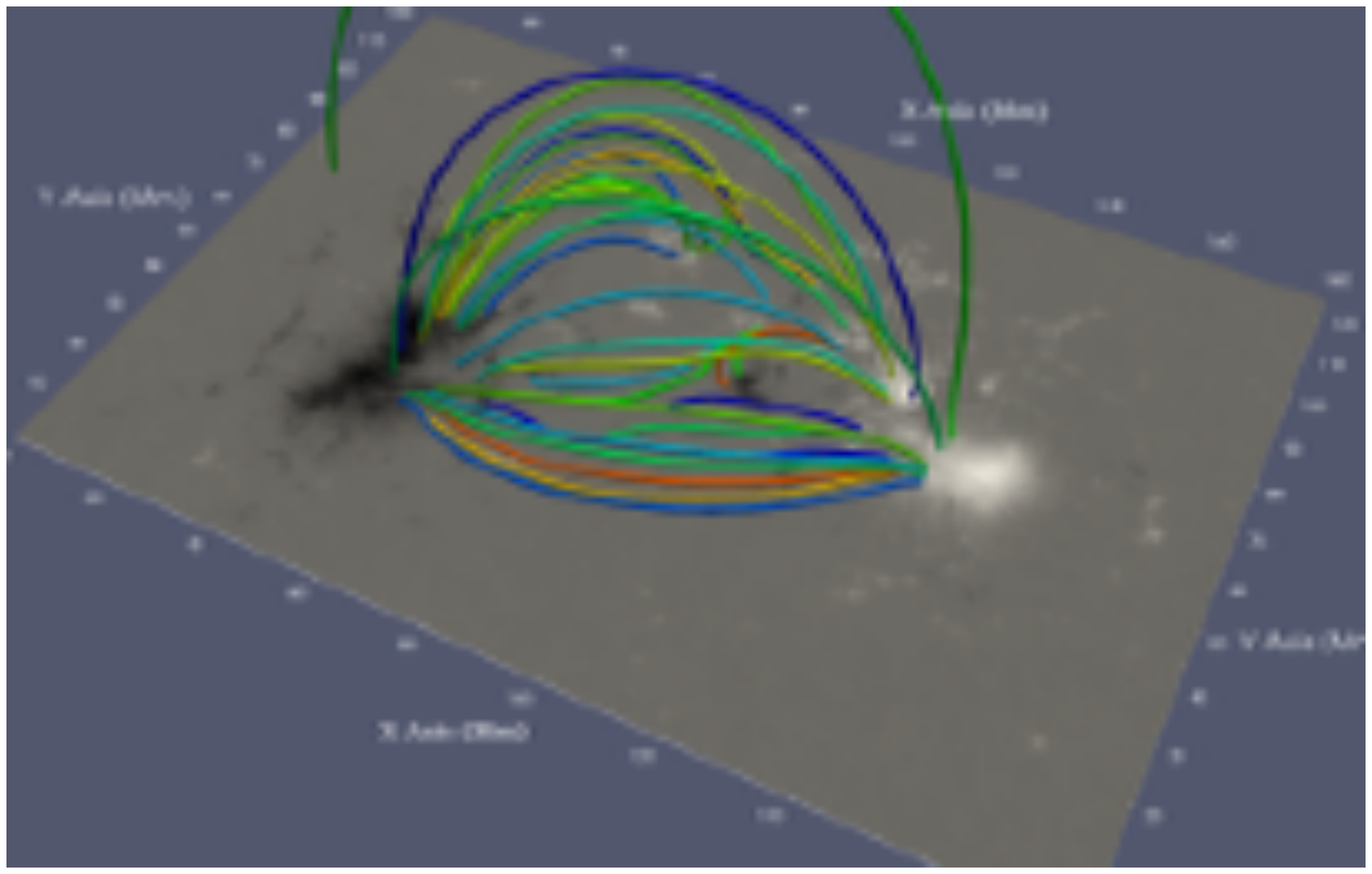
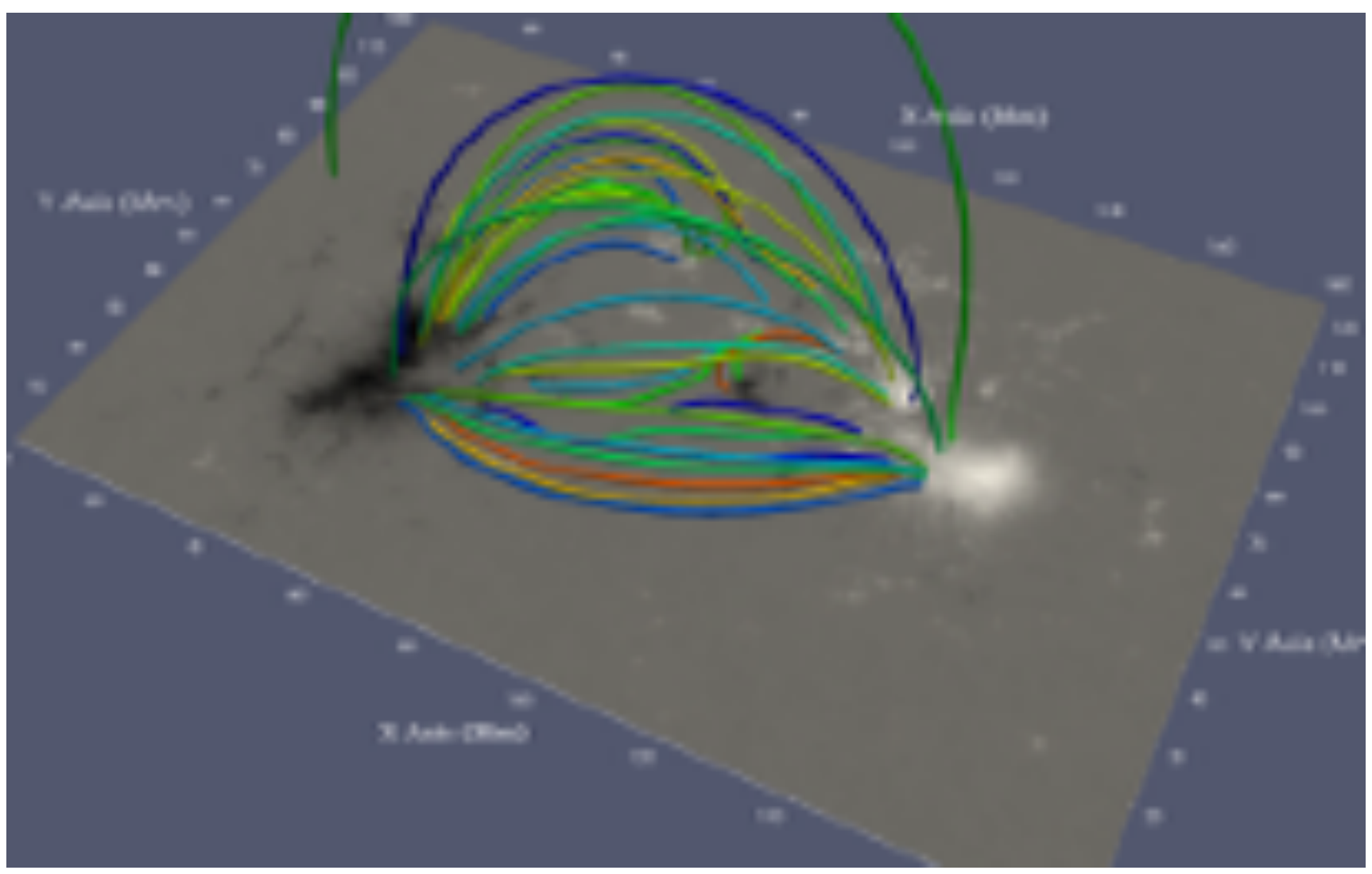
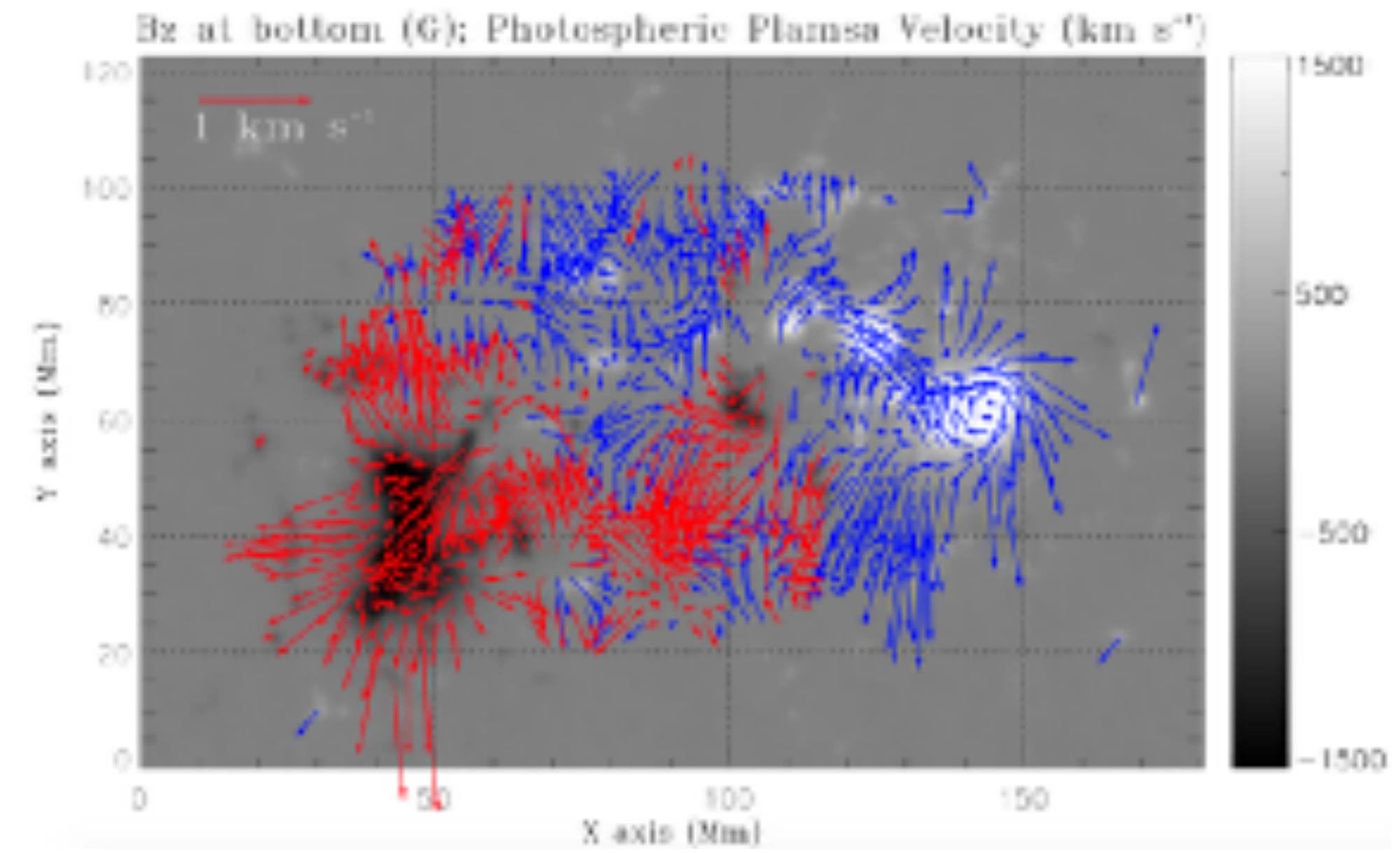
The 3D field modeled by NLFFF







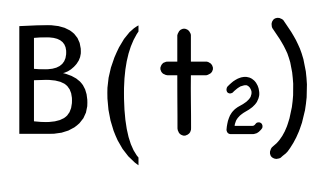
The bottom velocity estimated by DAVE4VM

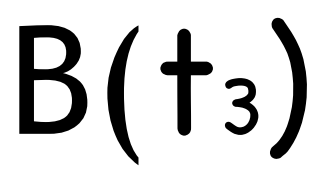

Bz at bottom (G); Photospheric Plasma Velocity (km s-1)
1 km s-1
Y axis (Mm)
X axis (Mm)
0
20
40
60
80
100
120
0
50
100
150
1500
500
-500
-1500

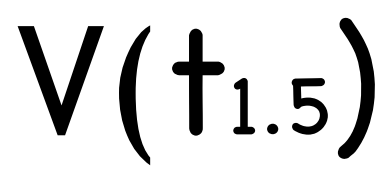
[redacted]

[redacted]


B(t1)


B(t2)

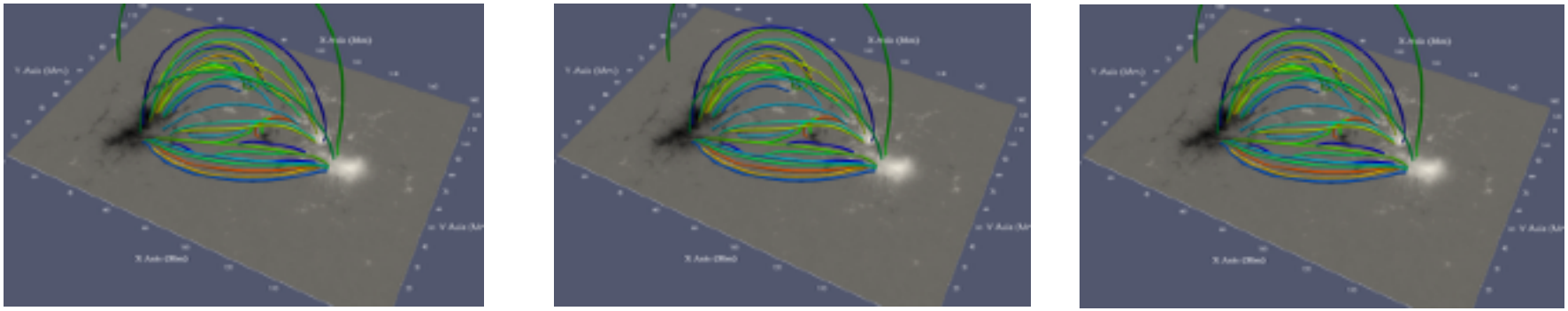

B(t3)


V(t1.5)


V(t2.5)

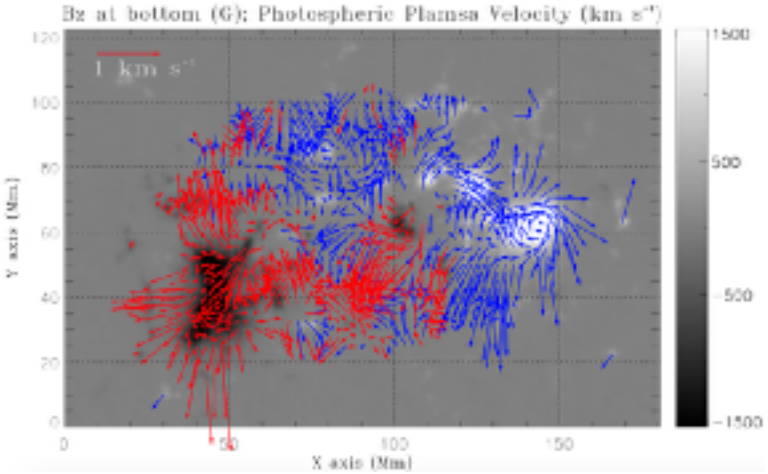
The 3D field modeled by NLFFF

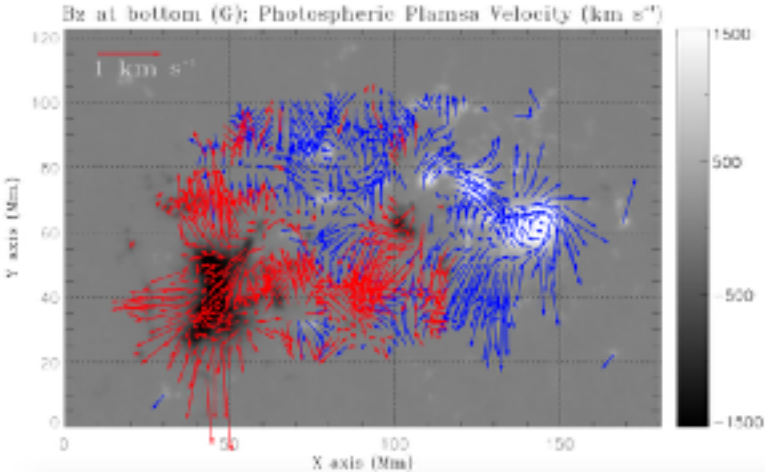
$B(t_1)$ $B(t_2)$ $B(t_3)$



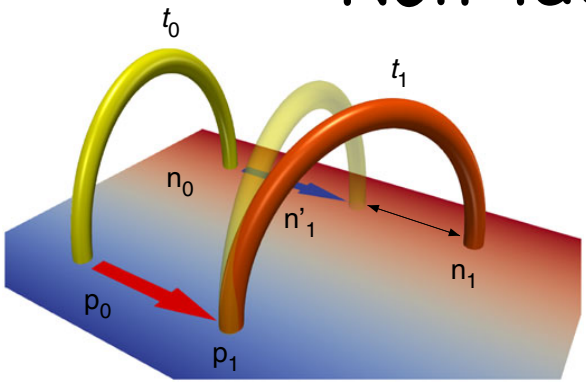
The bottom velocity estimated by DAVE4VM

$V(t_{1.5})$ $V(t_{2.5})$





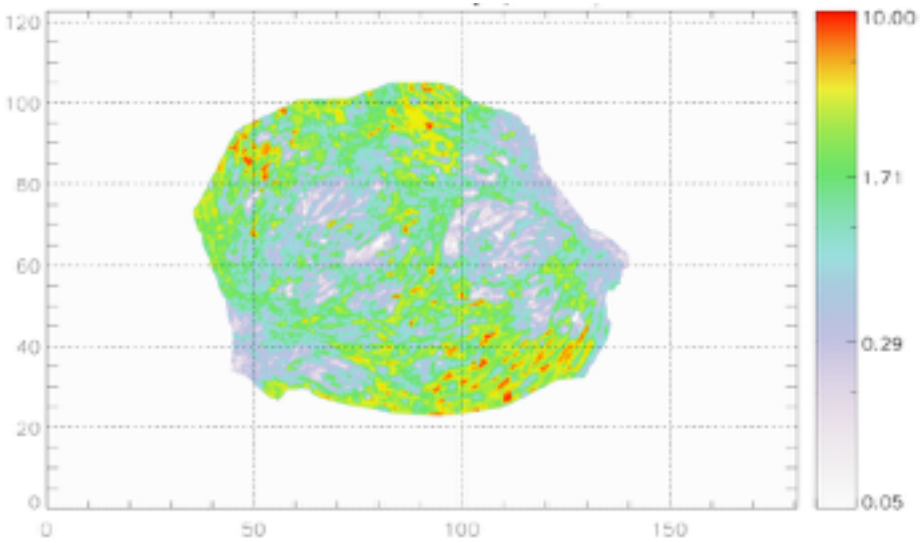
Non-ideal Motion & Heating



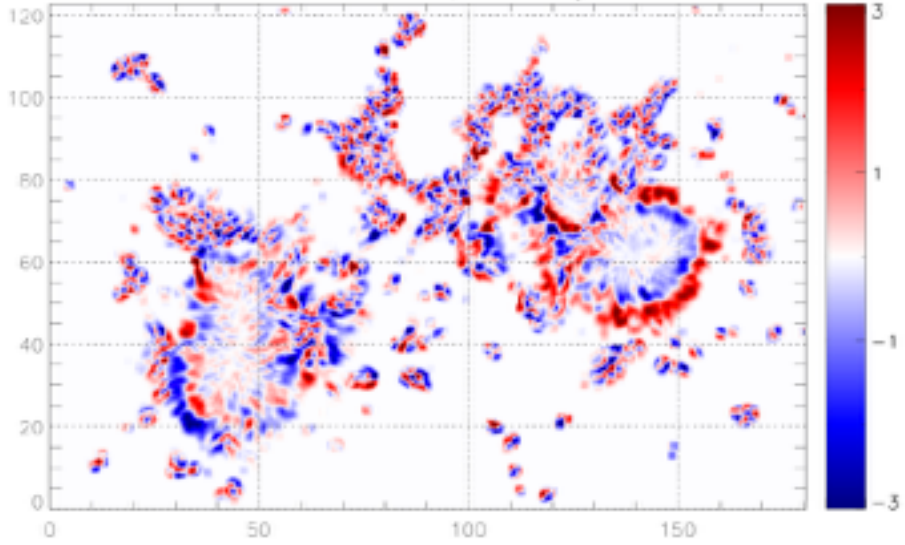
$$V_s = \frac{|\mathbf{n}_1 - \mathbf{n'}_1|}{\delta t}$$

$$P = \frac{\sum_i P_i}{A} = \frac{1}{\mu_0}\alpha \mathcal{L} V_s \bar{B}^2$$

Non-ideal velocity (km s^{-1})



α at bottom (10^{-1} Mm^{-1})



Heating flux (W m^{-2})