

Pseudo-Spectral vs. LBE DNS

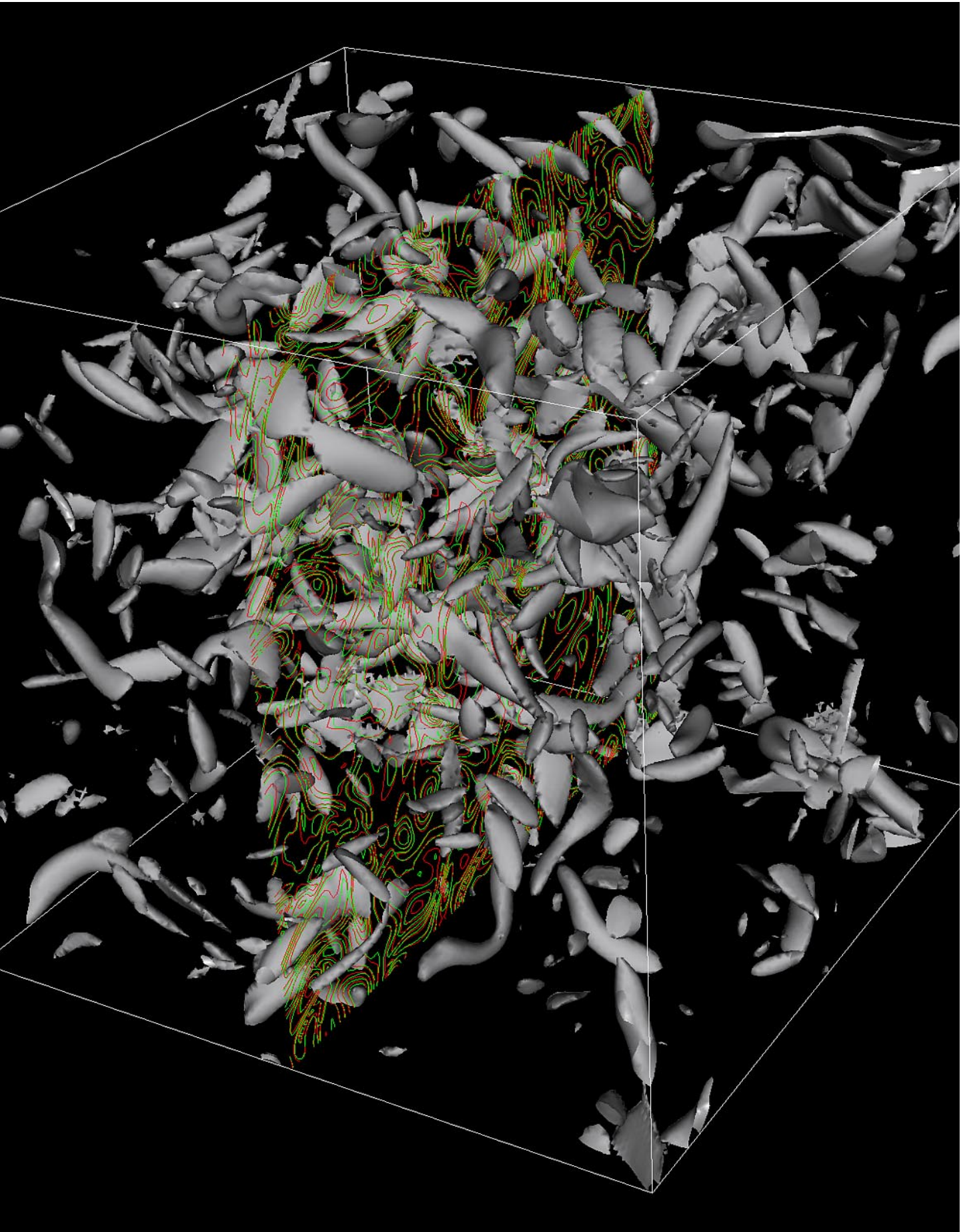
Homogeneous Isotropic Turbulence in a 3D Cubic Box

Method	L	N^3	ν	u'	dt	T	Re_λ	M
Spectral	2π	128^3	0.01189	0.993311	0.002	500	35.0	0
LBE	128	128^3	0.00987	0.040743	0.002	500	35.0	0.0687

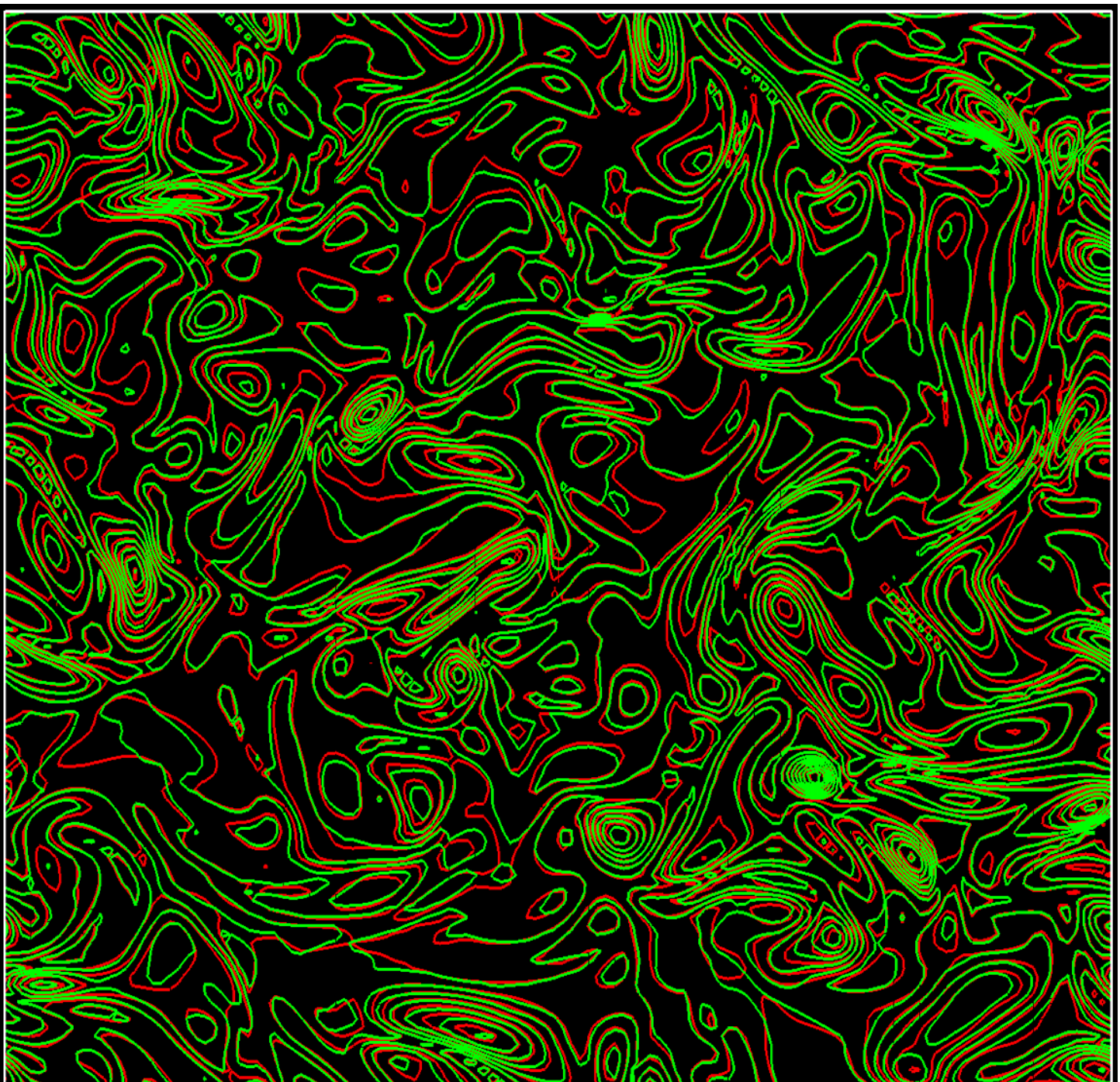
Parameters in Simulations

Taylor microscale Reynolds number:

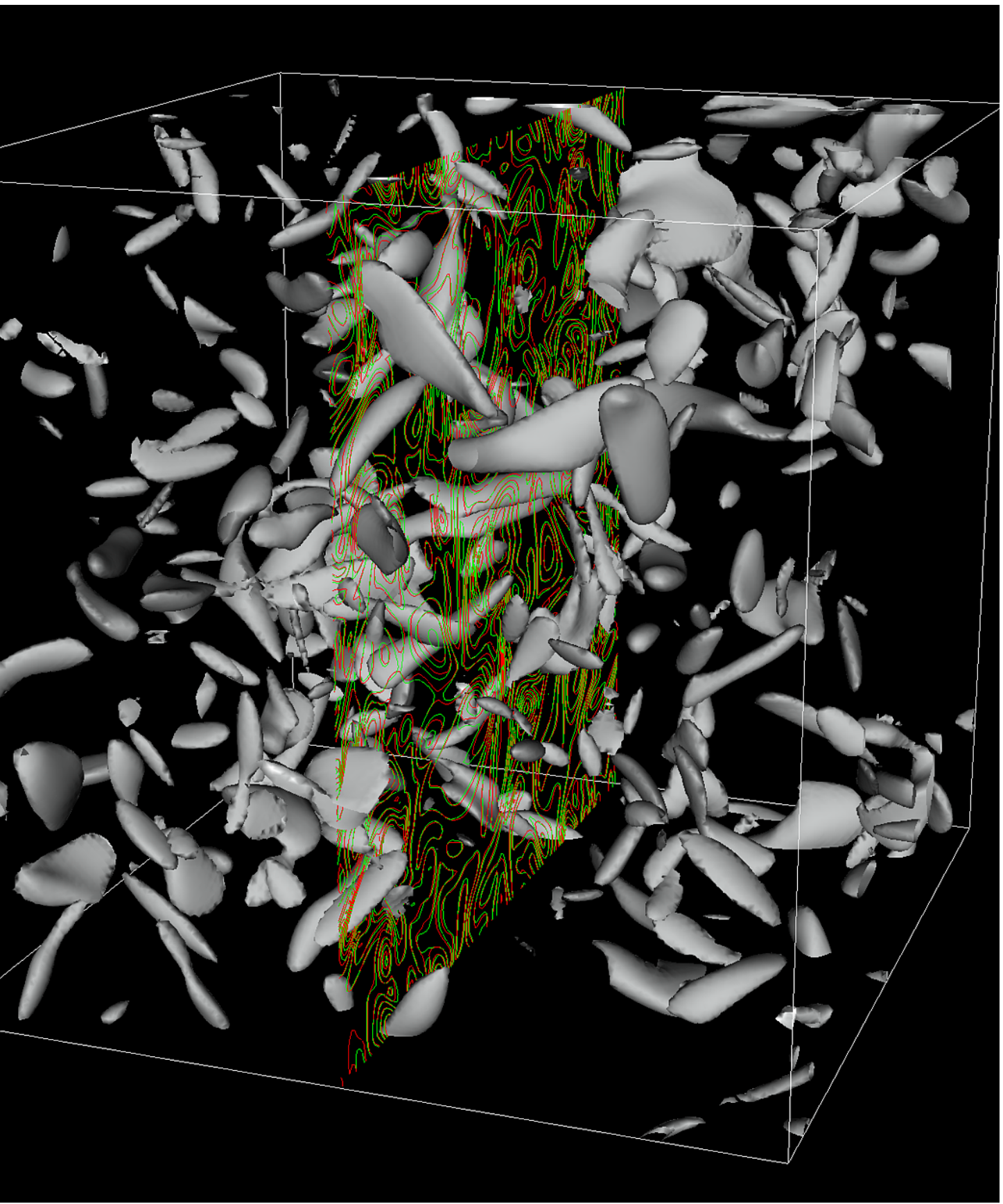
$$Re_\lambda = \sqrt{\frac{3K(t=0)}{2}} \frac{\lambda}{\nu}$$



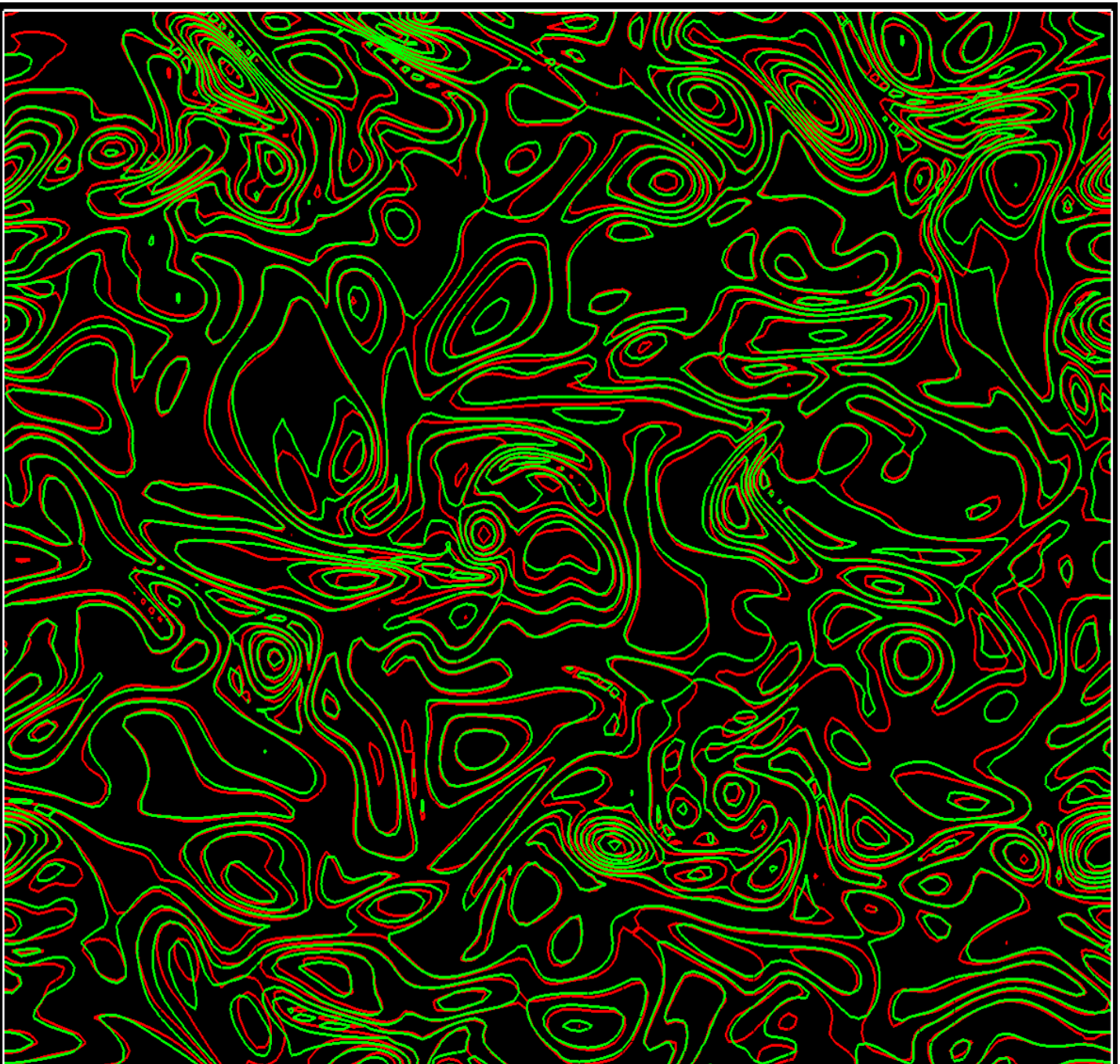
Wang & Luo (2000), 128^3 , $|\omega|$ isosurface, $t = 1$.



Wang & Luo (2000), 128^3 , $|\omega|$ contour, $t = 1$. Spectral (red) vs. LBE (green).



Wang & Luo (2000), 128^3 , $|\omega|$ isosurface, $t = 2$.



Wang & Luo (2000), 128^3 , $|\omega|$ contour, $t = 2$. Spectral (red) vs. LBE (green).