
ROMAN SHTERENBERG, University of Wisconsin–Madison, Math. Dept., 480 Lincoln Dr., Madison, WI 53706-1388, USA

Blow up and regularity for Burgers equation with fractional dissipation

We present a comprehensive study of the existence, blow up and regularity properties of solutions of the Burgers equation with fractional dissipation. We prove existence of the finite time blow up for the power of Laplacian $\alpha < 1/2$, and global existence as well as analyticity of solution for $\alpha \geq 1/2$. We also discuss solutions with very rough initial data.