

ASYMPTOTIC BEHAVIOUR OF SOLUTIONS TO THE DISSIPATIVE QUASI-GEOSTROPHIC EQUATION.

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In this talk we present results concerning the asymptotic behaviour of solutions to the $2D$ dissipative quasi-geostrophic equation

$$\begin{aligned}\theta_t + (u \cdot \nabla)\theta + (-\Delta)^\alpha \theta &= 0 \\ \theta_0(x) &= \theta(x, 0)\end{aligned}$$

for $\alpha > 1/2$ and $u = R^\perp \theta = (-R_2 \theta, R_1 \theta)$, for R_i the Riesz transform in the variable x_i . More precisely, we will show that for initial data in L^1 , solutions converge in L^p , for $1 \leq p < \infty$, with definite decay rates, to a rescaled multiple of the solution to the linear part. This is joint work with Clayton Bjorland (Univ. of Texas - Austin).

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