1110-35-372 **Igor Kukavica** (ikukavica@gmail.com) and **Fei Wang*** (wang828@usc.edu). *Weighted Decay for the Surface Quasi-Geostrophic Equation.*

We address the weighted decay for the solution of the surface quasi-geostrophic (SQG) equation which is given by

$$\theta_t + u \cdot \nabla \theta + \Lambda^{2\alpha} \theta = 0, \tag{1}$$

where $\Lambda = (-\Delta)^{1/2}$. The first moment decay $\| |x|\theta\|_{L^2}$ was obtained by M. and T. Schonbek in their paper "Moments and lower bounds in the far-field of solutions to quasi-geostrophic flows". Here we obtain the decay rates of $\||x|^b\theta\|_{L^2}$ for any $b \in (0,1)$ and the rate of increase of this quantity for $b \in [1, 1+\alpha)$ under natural assumptions on the initial data. (Received February 24, 2015)