

1112-35-193

**Peter Constantin, Michele Coti Zelati\*** (micotize@umd.edu) and **Vlad Vicol**. *Regularity and longtime behavior of SQG equations.*

We consider the global attractor of the critical SQG semigroup  $S(t)$  on the scale-invariant space  $H^1(\mathbb{T}^2)$ . It is known that this attractor is finite dimensional, and that it attracts uniformly bounded sets in  $H^{1+\delta}(\mathbb{T}^2)$  for any  $\delta > 0$ , leaving open the question of uniform attraction in  $H^1(\mathbb{T}^2)$ . We answer the question of uniform  $H^1(\mathbb{T}^2)$  attraction in the positive, by using ideas from de Giorgi iteration and nonlinear maximum principles. (Received August 03, 2015)