1030-76-289   **Alexander Kiselev*** (`kiselev@math.wisc.edu`), **Fedor Nazarov** and **Alexander Volberg**.
Non-local maximum principle in fluid mechanics and applications to critical surface quasi-geostrophic and Burgers equations.

We describe a new technique that can be used to prove the global existence and regularity of solutions for a class of equations with non-local dissipative terms, in particular critical surface quasi-geostrophic and Burgers equations. One can use these techniques to prove some other results, such as analyticity of the solutions in space and existence of solutions for rough initial data. (Received August 06, 2007)