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Yifeng Yu* (yyu1@math.uci.edu) and **Jack Xin** (jxin@math.uci.edu). *Periodic Homogenization of Inviscid G-equation for Incompressible Flows.*

G-equations are popular front propagation models in combustion literature and describe the front motion law of normal velocity equal to a constant plus the normal projection of fluid velocity. G-equations are Hamilton-Jacobi equations with convex but non-coercive Hamiltonians. We prove homogenization of inviscid G-equation for space periodic incompressible flows. The effective Hamiltonian is convex and homogeneous of degree one. It is also coercive if we further assume that the flow is mean zero. This is a joint work with Jack Xin (University of California at Irvine). (Received January 21, 2010)