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Tristan Buckmaster (buckmaster@cims.nyu.edu) and **Steve Shkoller** (shkoller@math.ucdavis.edu), CA , and **Vlad Vicol*** (vvicol@math.princeton.edu), Princeton, NJ 08544. *Nonuniqueness of weak solutions to the SQG equation.*

We prove that weak solutions of the inviscid and the dissipative SQG equations are not unique, thereby answering an open problem posed by De Lellis and Székelyhidi Jr. In view of the well-known global existence of weak solutions for the dissipative SQG equation with datum at the level of the Hamiltonian, our work is the first to show that weak solutions constructed via convex integration can exist in a regularity class in which the nonlinearity is weakly compact. (Received July 20, 2017)