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A determining form for the surface quasi-geostrophic equation

We show that the global attractor of the subcritical quasi-geostrophic equation (SQG) can be embedded in the long-time dynamics of an ordinary differential equation called a determining form. There is a one-to-one correspondence between the trajectories in the global attractor of the SQG and the steady state solutions of the determining form. The analysis combines De Giorgi techniques and elementary harmonic analysis.