1085-76-126 **Susan Friedlander*** (susanfri@usc.edu), USC Dept of Math, 3620 S. Vermont Ave, Los Angeles, CA 90089. *The Importance Of Being Even.*

We discuss several nonlinear active scalar equations that arise in fluid dynamics. These include the surface quasi-geostrophic equation and modified versions, the magnetogeostrophic equation, the incompressible porous media equation and modified versions. We pay particular attention to the situation where the divergence free drift velocity is more singular than the active scalar. We discuss results for both the non-diffusive equations and the fractionally diffusive equations. We show that when the operator that encodes the constitutive law is even rather than odd, the equations with regular initial data can be Lipschitz ill-posed.

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