Global flows with invariant measures for the inviscid modified SQG equation

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Abstract. In this talk we give an overview on some basic probabilistic methods and invariant Gibbs-type measures in the study of long time dynamics for certain nonlinear PDE. We then focus on recent work with N. Pavlovic, G. Staffilani and N. Totz where we prove the invariance of the measure associated to the conservation of “enstrophy” ($L^2$) and prove the existence of solutions of arbitrary large lifespan for initial data in a set of full measure in the support of the measure.