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Radu Dascaliuc, Ciprian Foias and **Michael S. Jolly*** (msjolly@indiana.edu), Department of Mathematics, Rawles Hall, Indiana University, Bloomington, IN 47405. *Invariant measures and maximal averaged palinstrophy in 2-D turbulence.*

Turbulence is often measured in terms of time averages of enstrophy and palinstrophy (2nd and 3rd moments of velocity). These time averages are in some sense equivalent to ensemble averages with respect to an invariant probability measure on the global attractor. We present estimates for the measures of liftings to the attractor of regions in the enstrophy,palinstrophy-plane for the 2-D Navier-Stokes equations. We also characterize the type of flow that results in maximal averaged palinstrophy. (Received January 23, 2007)