1006-60-98 **Hakima Bessaih*** (`bessaih@uwyo.edu`), Department of Mathematics, Ross Hall 210, Laramie, WY 82071. *Some Results about 2D Euler equation perturbed by noise.*

A 2-dimensional Euler equation subject to a stochastic perturbation is investigated. We prove some results of well posedness for inviscid flows described by stochastic Euler equations. We study both multiplicative and additive noise. In the case of additive noise, we prove existence and uniqueness of strong solutions (in the probabilistic sense) under proper assumptions on the regularity of the stochastic perturbation in the space variable (in time it is only continuous), where we use pathwise arguments. To relax the conditions on the space regularity on the stochastic perturbation, we use martingale arguments and prove the existence of weak solutions (in the probabilistic sense), with a more general noise; a multiplicative one. As far as the uniqueness is concerned, the result has no contrepart for the martingale solution. (Received February 09, 2005)