1038-60-211   **Jose E. Figueroa-Lopez*** (`figueroa@stat.purdue.edu`), Department of Statistics, Purdue University, 250 N. University Street, West Lafayette, IN 47907. *State-dependent utility maximization in markets driven by additive Levy processes.* Preliminary report.

We consider duality theorems for portfolio optimization problems in the context of jump-diffusion markets driven by additive (Levy) processes. The considered optimization problems encompass the situation in which the utility function is bounded and changing with the sources of randomness, for instance, via the value of a contingent claim. An important example of this setting is the optimal partial replication problem of contingent claims. The main point here is to propose manageable dual problems, whose domains enjoy explicit parametrization that can be used further for numerical analysis. The desired parametrization is accomplished by using a powerful multiplicative optional decomposition for nonnegative supermartingales due to Föllmer and Kramkov in combination with new results to show closure of classes of Poisson integrals. (Received February 10, 2008)

1